The Lumleian Lectures

ON

SOME PROBLEMS IN CONNEXION WITH APHASIA AND OTHER SPEECH DEFECTS.

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LECTURE III.[1]

Delivered on April 8th, 1897.

MR. PRESIDENT AND GENTLEMEN,—At the close of the last lecture I considered the different degrees of amnesia verbalis that may result from functional defects or partial lesions of the left auditory word-centre. We must now consider the effects produced by more serious lesions of this centre.

(*b*) *Effects produced by destruction of the left auditory word-centre.*—Where, instead of partial or mere functional defects, we have to do with more or less complete destruction of the left auditory word-centre by some organic disease a correspondingly complete word-deafness is produced, so that the patient is no longer able to comprehend spoken language. Spoken words become to such a patient mere meaningless sounds. As I have already pointed out, word-blindness (or alexia) is also an occasional consequence of such a lesion, though it is not to be regarded as a necessary accompaniment, whatever Wernicke and Déjerine may say to the contrary. These authorities, moreover, as well as Mirallié, hold that paraphasia is the kind of speech defect that is entailed by destruction of the auditory word-centre. Wyllie also, in his recent work on "The Disorders of Speech," says (p. 289) that the extreme defect in an "auditive" in consequence of this lesion would be what is termed "gibberish aphasia," and adds: "In general, the destruction of the auditory centre leaves the patient in possession of considerable powers of expression." This question as to the nature of the alteration of speech that goes with destruction of the auditory word-centre is a very interesting and important one, and will require careful consideration.

The views that I entertained on this subject some years ago were thus expressed[2]: "Suppose a person to be suffering from defective activity of the auditory word-centre, so that names cannot be recalled 'voluntarily' or by 'association.' There would already be great hesitation and difficulties in the expression of thoughts both in speech and in writing. But suppose this mere defective activity to be replaced by actual destruction of the left auditory word-centre so that its functional activity became actually lost, words could then, of course, neither be recalled 'voluntarily' nor by 'association,' and, still further, they could not be perceived and consequently could not be imitated. An individual thus affected would neither be able to speak nor to write—that is, he would be completely aphasic, with the superadded peculiarity that he would not readily comprehend spoken and perhaps written language." It should be observed that these statements were made partly as *a priori* deductions and partly as a result of the observation of actual cases, though at this period there had only been too few of them. Still, it seemed to me then—and from several points of view would still seem a legitimate conclusion—that loss of articulate speech should result from destruction of the auditory word-centre, just as agraphia results from destruction of the visual word-centre. Ballet[3] and Ross,[4] following me, expressed very similar views, though the majority of writers have rather followed Wernicke, and regarded paraphasia as the natural accompaniment of word-deafness.

Now that more cases have been observed we are in a better position for throwing light upon this point. An examination of the recorded observations in which the lesion has been limited to the hinder part of the first, and perhaps also of the second, left temporal convolutions (without perceptibly encroaching upon the visual word-centre) shows surprisingly different results in regard to the nature and degree of the speech alteration met with. In some of the cases there has been aphasia; in others a more or less marked paraphasia; whilst in two or three of the cases the defect in voluntary speech has been less marked. Thus, looking to the same sixteen cases of destruction of the auditory word-centre to which I previously referred[5] when speaking of the frequency with which word-blindness and agraphia occur as additional symptoms, I find that what is described as "motor aphasia" existed in six of them (viz., in Mirallié's list Nos. 7, 11, 12, and 25; and in Amidon's list Nos. 14 and 18). In six of the cases also some amount of paraphasia existed (viz., in Mirallié's list Nos. 3, 4, 19, 21, and 23; and in Amidon's list No. 7). In one case (Mirallié's No. 14) both aphasia and paraphasia are said to have existed; while in the three remaining cases (Amidon's Nos. 6, 15, and 17) voluntary speech seems to have been rather less affected.[6]

Thus it will be seen that we have all been more or less wrong; and I must confess that the revelation of these apparently contradictory results in the way of speech disturbance in association with word-deafness surprised me not a little. The meaning of such remarkable variations demands a careful consideration.

The three cases last referred to in which voluntary speech has been least interfered with are, I believe, altogether exceptional. One of them is a case recorded by Claus,[7] concerning which, unfortunately, there are only a few meagre details.

CASE 22.—A man, aged sixty-eight years, understood nothing said to him. He answered always wrongly, while he spoke correctly. His intelligence was weakened. His hearing was good. A focus of softening was found involving the left first temporal convolution, except its anterior third. This disorganised portion of the cortex and also the corresponding border of the second temporal convolution had a brown colour.

I have been unable to obtain any further particulars concerning this case, as the periodical in which it is reported is not contained in either of the libraries to which I have had access. It seems to be Case No. 20 in the "Table of Cases of Sensory Aphasia with Lesions and Symptoms" cited by Allen Starr,[8] and there also no further details are given. No weight, therefore, can be attached to this example, the details of which are so incomplete. The second case is one that was originally recorded by Wernicke,[9] and the following are all the essential details that are given.

CASE 23.—A woman, aged seventy-five years, was admitted to hospital on Oct. 7th, 1873, showing well-marked indications of old age. It was ascertained from her relatives that her speech had suddenly become troubled and almost lost on Nov. 2nd, 1872. On admission her psychical condition seemed to be that of a crazed person complicated with aphasia. She mostly lay huddled up in bed, and suffered from incontinence of urine and of fæces. She answered all questions put to her quite wrongly, and did not attempt to do anything she was told. She paid little attention to her surroundings and showed no desire to make any communications concerning her distressing condition. Her spontaneous speech was comparatively insignificant, though it was sufficient to show she was not suffering from motor aphasia. Her speech trouble was further shown by her alteration and displacement of words. Thus she often said correctly, "I thank you heartily," and another time, "I thank you most gively," &c.; "I am quite ill"; "Ah! how cold I am"; "You are a kind gentleman." These were usual expressions; yet the medical man whom she had just called a kind gentleman she called soon after "mein Tochtel" or "mein Sohnel." An ophthalmoscopic examination on Nov. 5th, 1873, showed grey atrophy of the right optic disc. Sensibility seemed intact, and the hand-grip was weak, but equal on the two sides. More exact observations on these points were not made. There was no improvement in her psychical or bodily symptoms, and death occurred as a result of intestinal troubles on Dec. 1st, 1874. At the

[1] Lectures I. and II. were published in THE LANCET of April 3rd and April 10th, 1897, respectively.

[2] The Brain as an Organ of Mind, 1880, p. 685.

[3] Le Langage Intérieur, 1886, pp. 91 and 166.

[4] On Aphasia, 1887, p. 119.

[5] Excepting that I omit Mirallié's Case 10, and include instead his Case 2, where the only lesion beyond the destruction of the first temporal convolution was a very minute "plaque jaune," no more than a millimetre square, situated in the upper border of the foot of the third frontal convolution.

[6] Numbers of the cases of "sensory aphasia" hitherto recorded are comparatively valueless for the purpose of any critical study of their symptoms, either on account of the nature, extent, and complication of the lesions, or from the paucity of the clinical details, or perhaps from two or three of these causes in combination. Among such more or less vague cases I include thirteen in Mirallié's list (viz., Nos. 2, 15, 18, 20, 22, 27, 28, 32, 33, 34, 35, 36, and 37), and three in Amidon's list (viz., Nos. 8, 9, and 22). In four other cases—namely, Nos. 10, 11, and 17 of Mirallié's list, and No. 20 of Amidon's—there was a lesion in Broca's centre as well as in the auditory word centre.

[7] Der Irrenfreund, No. 6, 1883.

[8] Brain, 1890, p. 100.

[9] Der Aphasische Symptomen-Complex, 1874, p. 43.

necropsy there was found an increase in the sub-arachnoid fluid, and the convolutions generally of both hemispheres were somewhat wasted. There was also an excess of fluid in the lateral ventricles. All the brain arteries were highly atheromatous, and there was thrombosis of some of the terminal branches of the left middle cerebral artery. The whole of the upper temporal convolution and part of the supra-marginal lobule were in a state of yellow softening. The island of Reil was intact.

It will be seen from the above particulars that this patient's spontaneous speech was extremely limited and that she made frequent mistakes in words and in their pronunciation. The statement contained in Amidon's abstract, therefore, that her "spontaneous speech was very good," certainly goes far beyond what there is any warrant for. It is worthy of note also that the auditory word-centre may not have been entirely destroyed, since the second temporal convolution seems not to have been at all involved. In the previous case, reported by Claus, it should also be observed that the second temporal convolution was only very slightly involved. It is merely said that its upper border was affected ("had a brown colour").

The third case, curiously enough, has often been quoted as though it were a typical example of word-deafness rather than one of an unusual character. It was recorded by Giraudeau,[10] and some of the principal details are these.

CASE 24.—The patient, a woman, aged forty years, had previously enjoyed good health, though she had never menstruated. For three months before admission to l'Hôpital St. Antoine she had suffered from a constant headache, with nocturnal exacerbations of such a character as to render sleep impossible. There had been no vomiting or epileptiform attacks. For upwards of a month before admission she was obliged to give up work in consequence of the severity of the pain. At about the same time it was observed that she no longer understood what was said to her and that she did not answer when spoken to. This information was obtained from the persons who accompanied her to the hospital. On admission the patient was found to be very stout; there was no fever, the right pupil was slightly dilated, and there was severe headache. When asked her name she raised her head, but did not answer. When asked a second time she answered, "What do you say?" and on the same question being put a third time she said, "I don't understand." When asked a fourth time she answered correctly, "Marie Bouquinet." On being asked, "How long have you been ill?" she evinced the same difficulty of understanding, but replied, after a time, "Three months." When asked to give her address she replied, "Perhaps for three months and a half." Being interrogated as to her occupation, she presented the prescriptions of the physician who treated her in the town, and added, "A white powder" (sulphate of quinine). On several occasions we changed the mode of our interrogations, but the replies of the patient were always analogous to those mentioned above. After having by great difficulty made her understand a question by frequent repetition she answered; but whatever subsequent questions were put to her she followed her first idea, and her subsequent replies had no relation whatever to the questions put to her. Sometimes, however, it was impossible to make her understand our meaning at all, and to every question addressed to her she invariably replied: "What do you say? I don't understand. Cure me." Her hearing however, was unaffected; there was no discharge from the ear; she heard the ticking of a watch, and turned her head at any slight noise made near her. Vision was good in both eyes, and there was no word-blindness, for she could easily read the headings of the bed-ticket and written questions put to her, to which she replied verbally or in writing after a little reflection. Tactile sensibility was preserved, as well as the senses of taste and smell, and her motor power was unaffected. Without entering into further details, suffice it to say that the psychical affection rapidly increased, and on the ninth day after her admission the word-deafness was complete, and whenever she was addressed she invariably said, "I do not understand," and then began to weep. The next day she fell into a state of coma and died. At the necropsy a sarcomatous tumour of the size of a walnut was found occupying the posterior part of the first and second temporo-sphenoidal convolutions of the left hemisphere, the rest of the brain being healthy.

Here the details are fortunately more ample. Although this patient's speech was limited, there was clearly neither aphasia nor paraphasia, and this may, I think, be explained either by supposing that the lesion in the early days did not destroy the whole of the auditory word-centre—which is more than possible seeing that the lesion was a tumour and also that the word-deafness was not absolute; or else that the patient was a strong "visual"—a person, therefore, in whom the excitation of Broca's centre might have been brought about directly from the visual word-centre, both in spontaneous speech and in reply to written questions. And to the latter she is expressly said to have replied "verbally or in writing, after a little reflection." This possibility might, of course, be applicable also in explanation of the other two cases.

There is an interesting point worth noticing here in reference to cases of partial word-deafness, illustrating the increased power of recollection or comprehension when two or more bonds of association are simultaneously called into activity. Thus, in a case of incomplete word-deafness observed by Fränkel, when the patient was asked, "What is a fork?" he replied, "I don't know what you say." But when a fork was shown to him at the same time that its name was pronounced he not only recognised the fork, but comprehended its name and repeated it, the visual image of the object here helping to revive the auditory image of the word. At other times when this same patient was questioned, at first he did not understand, but he would struggle to articulate the words used and would thus, after various attempts, arrive at the meaning of the question. Another instance in which visual impressions were habitually called upon to aid a damaged auditory centre was long ago recorded by Abercrombie in his "Inquiry into the Intellectual Powers," where he says (seventh edition, 1837, p. 158): "The gentleman to whom it referred could not be made to understand the name of an object if it was spoken to him, but understood it perfectly when it was written. His mental faculties were so entire that he was engaged in most extensive agricultural concerns, and he managed them with perfect correctness by means of a remarkable contrivance. He kept before him in the room where he transacted business a list of the words which were most apt to occur in his intercourse with his workmen. When one of them wished to communicate with him on any subject he first heard what the workman had to say, but without understanding him further than to catch the words. He then turned to the words in his written list, and whenever they met his eye he understood them perfectly. These particulars I had from his son, a gentleman of high intelligence."

This slight digression may serve to illustrate one of the two suggestions I have made in explanation of the comparatively slight defects in speech presented by the three altogether exceptional cases of word deafness to which I have above referred. But, before pursuing our attempt to explain the differences presented by the other cases, it will be well first of all to see what the results have been in two other sets of cases involving destruction of the left auditory word-centre as one component of the existing lesions—that is to say, in the two next sets of cases already cited for consideration—viz., (2) the cases in which there have been combined lesions of the auditory word-centres in each hemisphere; and (3) the cases in which the auditory and the visual word-centres have been destroyed or severely damaged in both hemispheres.

(2) DEFECTS RESULTING FROM LESIONS OF THE AUDITORY WORD-CENTRE IN EACH HEMISPHERE.

Cases of double lesion in the upper temporal convolutions are extremely rare. Only four such cases are known to me, and concerning these clinical details in three are unfortunately extremely meagre, consisting of particulars obtained from friends or others, rather than from the examination by a skilled observer.

The first of these cases to which I will refer is one that has been recorded by Kähler and Pick,[11] though the details are very scanty and of the kind above mentioned.

CASE 25.—A woman, aged forty-two years, was seen eighteen months after the attack. Her husband stated that she suffered from headache for three months, when loss of speech and hearing supervened, and symptoms of apparent dementia. She uttered inarticulate sounds almost all day long. She was after a time admitted to an asylum, where she remained for six months, to the date of her death. Whilst there she continued to mumble constantly, the only articulate sounds she uttered being "Tschen" and "Tscho." She occasionally moved her head when spoken to as if she heard, though she did not understand what was said. There was no paralysis or other motor disturbance. At the necropsy there was congestion of the membranes, the frontal and parietal convolutions were somewhat wasted, the sulci being wide and filled with serum. Over the left temporal lobe the pia was jelly-like, whilst its convolutions were swollen, pressed together, and of soft, jelly-like consistence. The right temporal lobe was also slightly softened. Sections showed that the softening was confined to the cortex—on the right side of all the temporal convolutions except the basilar, and on the left side to the same region. The foot of the third frontal convolution was not involved.

The second case is one that has been recorded by C. K. Mills,[12] and although the details of the necropsy are full and all that could be desired, the patient only came under his observation a few days before her death when she was very weak and ill, suffering from the effects of an old valvular disease of the heart. He says: "Some of the facts of her history were obtained from relatives who came to see her at the hospital, and others were procured after her death from a brother and sister-in-law, whom I sought out and carefully interviewed." The following are

[10] Revue Médicale, 1883, p. 443.

[11] Vierteljahresschrift für Praktische Heilkunde, No. 1, 1879, p. 6.

[12] Philadelphia University Medical Magazine, November, 1891; and Brain, 1891, p. 468.

all the particulars given that are of any importance from our point of view.

CASE 26.—A woman, aged forty-six years, was admitted to the Philadelphia Hospital in August, 1891. Fifteen years before her death she had an apoplectic attack which left her word-deaf but not paralysed. Prior to the first attack of apoplexy her hearing had been good, but after it she could not by hearing understand anything that was said to her. She could, however, hear music and sounds of various kinds; for instance, when an organ or band had performed in the street she at times had called attention to the fact, and she had also come down from the second or even the third storey to open the front door in answer to a knock. She could hear such sounds as a bell ringing and a clock ticking. These facts were elicited from her relatives through various statements made by them, chiefly spontaneously. When anyone wished to communicate with her it was done by means of writing or signs, as she had fully preserved her vision and was evidently not word-blind either for writing or printing. She often read the newspapers, and could do so with intelligence up to a few weeks before her death. [It correct this is remarkable, as it would have been long after the destruction of both auditory word-centres.] Her sister-in-law said that several times she had heard her try to read the newspaper aloud, and in so doing she had seemed to understand what she read, "but made a tangle of her words." From the time of the first attack she had never been able to speak well, her words becoming jumbled or tangled. From the description given of her manner of speech the defect was evidently a serious form of paraphasia and paralexia. Her relatives spoke positively of her deafness as having been due to the "stroke"; but the apoplectic attack, although it had at once caused this word-deafness and paraphasia, had not in any way, as far as could be ascertained, affected either motion or sensation. She could write, but "sometimes mixed up her words in writing." Nine years before her death she had another and more severe apoplexy, after which her deafness increased for sounds as well as words until it was almost total. This seizure left her also with partial left hemiplegia, chiefly affecting the arm. Dr. Mills adds: "She was first examined by me on Aug. 24th, 1891. Her condition then was one of almost complete helplessness. It was impossible to make her understand what was said to her, and, so far as could be determined by repeated tests, she was totally deaf; but notwithstanding her weakness, helplessness, and deafness, her face had a somewhat intelligent expression. She looked about her as if she knew what was going on. She was very emaciated; her heart's action was excited, and examination showed the presence of marked murmurs, both mitral and aortic. She became feebler day by day, and died Aug. 28th." At the necropsy the posterior two-thirds of the left first temporal convolution was found to be shrunken to a thin strip, and the posterior fourth of the second temporal convolution was also atrophied. The other left temporal convolutions were healthy. On the right side there was an old and very extensive hæmorrhagic cyst, which had completely destroyed the first and almost completely the second temporal convolution, as well as the island of Reil and other parts in the immediate neighbourhood. (Very full details of the condition of the brain are given, and in the *Philadelphia University Medical Magazine* there are two excellent photogravures showing the extent of the lesions.)

This is undoubtedly a very important case, especially from the point of view of cerebral localisation, from which standpoint Mills principally deals with it. It is interesting to find that after the patient became word-deaf, owing to the first lesion on the left side, there was no word-blindness, as "she often read the newspapers and could do so with intelligence"—although some would have us believe that even the destruction of Broca's centre, which is so much further away from the visual centre, causes alexia. There was, however, paraphasia and paralexia. Unfortunately there is no definite statement as to what alteration took place in the patient's speech after the lesion occurred on the right side—that is, nine years before her death. I therefore wrote to Dr. Mills to ascertain whether he could supply any further information on this important point, and his reply is as follows: "She was admitted to the hospital some little time (probably two or three weeks) before I examined her, and my recollection is that it was reported to me that she had not spoken during that time, but more than this I cannot say ..... and unfortunately I have no longer the means of verifying my recollection. She certainly was not able to speak, or at least did not speak, at the time of my examination." I will merely add that, from the fact of the word-deafness in this patient not being associated with word-blindness, it does not necessarily follow that the paraphasic speech should have been lost—that is to say, that there should have been speechlessness—immediately after the occurrence of the lesion in the right hemisphere. There is the possibility that she might have been one of those "visuals" capable of speaking, though in a disordered fashion, by the direct action of the visual word-centre upon Broca's convolution. It seems pretty clear, however, from what Dr. Mills says, that at the time she went into the hospital she was incapable of speaking. Still, it is important to bear the above-mentioned possibility in mind, as it is one to which we shall have to recur.

The third case is one that was recorded by Wernicke and Friedländer[13] and an abstract of it has been given by Ferrier[14] which I will now quote.

CASE 27.—A woman, aged forty-three years, who had never suffered from deafness or affection of vision, was attacked on June 22nd, 1880, with right hemiplegia and aphasia. She remained in the hospital until Aug. 4th, when she was discharged. At this time the patient could speak, but she spoke unintelligibly, and was sometimes believed to be intoxicated. She not only could not make herself understood, but she could not understand what was said to her. She was received into the hospital again on Sept. 10th, with slight paresis of the left arm. The right hemiplegia had entirely disappeared. The patient was looked upon as insane. She was absolutely deaf, so that she could not be communicated with. She died from an attack of lœmatemesis on Oct. 21st. An extensive lesion was found in each temporal lobe (of which figures are given). On the left side it involved the posterior half of the first and second temporal convolutions and a small part of the third; on the right side it involved the angular gyrus, the posterior extremity of the upper temporal convolution, and encroached slightly on the occipital convolutions.

The fourth case has been described by Pick. It is one of great importance, but as it is also one of a very exceptional nature I reserve its consideration for the present.

(3) DEFECTS RESULTING FROM DESTRUCTION OF THE AUDITORY AND VISUAL WORD-CENTRES IN EACH HEMISPHERE.

There is only one case known to me in which these combined lesions have existed in the two hemispheres, although there is another with which it will be not uninteresting to compare it where complete blindness and deafness had been produced in infancy by peripheral lesions.

The case definitely belonging to this category was reported many years ago by J. C. Shaw,[15] but unfortunately in this as in other rare cases many essential details are omitted. Still this case is so valuable by reason of its extreme rarity that we are glad to accept it notwithstanding the paucity of clinical details. All the essential recorded facts are these.

CASE 28.—A woman, aged thirty-four years, was admitted into King's County Lunatic Asylum on Sept. 25th, 1879. A few facts concerning her were obtained from a sister. Two months before admission she complained of being unable to use the right arm. Soon afterwards she had a sudden attack characterised by loss of consciousness, inability to speak, and loss of hearing. They did not notice at this time that she had any loss of vision. She is said to have remained "unconscious" about two weeks, after which she was able to get up, and then began to talk. But she could talk sensibly only for a few minutes, then she would ramble and become incoherent. The friends were indefinite as to the extent of her sight trouble at this time, but there seems to have been marked mental disturbance. The certificates committing her relate that "she says some men are trying to kill her; she screams without cause; and she is at times violent." The following meagre notes concerning her condition are then given:—"On admission she is found to be very stupid; does not answer any questions, evidently does not hear them; is quite deaf. Pupils slightly dilated and equal; she is evidently quite blind. Physical condition poor; habits dirty. Oct. 18th and Nov. 21st: Had a severe epileptiform fit on each of these days. Dec. 11th: Repeated tests of tactile sensibility and smell show them to be unimpaired, but she is absolutely deaf to all noises and also blind. Dec. 16th: Walks about the hall using disconnected and unintelligible words; at times speaking very loudly and screaming. Jan. 31st, 1880: Severe convulsions lasting seven hours. Muscular spasm most marked on left side (the right arm remained contracted afterwards during two days). Feb. 14th: Is up again; walks about; shows no sign of paresis anywhere. October: She has become quite noisy, talking and screaming unintelligibly night and day; is growing thinner and more stupid, if that were possible." The patient remained in about the same condition till September, 1881, when she developed a low form of pneumonia and died on Sept. 19th. At the necropsy an almost exactly symmetrical patch of cortical atrophy was found in each hemisphere. It involved (as is shown by two figures) the greater part of the upper temporal and angular gyri, the marginal lobule, and the upper parietal lobule on each side. In the affected areas it was found "that the grey matter had entirely disappeared, leaving the very outer layer to which the pia was attached and the white matter below, so that there was really a cavity or space between the two, formed at the expense of the grey matter. Microscopic examination showed this outer layer to be composed of dense connective tissue filled with nuclei." There was no atheroma of the great vessels, and, except that the patches of cortical atrophy mentioned involved on the left side a small portion of the upper part of the ascending parietal, and on the right side a small portion of the lower part of the corresponding convolution, other portions of the brain seem to have shown no appreciable lesion.

It is interesting to find also that in the celebrated case of Laura Bridgman, who was totally deaf and blind from about the end of her second year, her power of uttering articulate sounds was not very different in kind, though less in degree, than that which was met with in the case above recorded. The following account of her condition in this respect is given by Kussmaul[16]:—

CASE 29.—The child lost her eyesight and hearing about the end of her second year, when she was beginning to talk, and in consequence soon lost the power of speech. Now, although it may be assumed that she retained no memory of sounds, which long experience teaches us is the rule with those who become deaf-mutes so early, yet she was able to produce a multitude of sounds. She took the greatest pleasure in

[13] Fortschritte der Medicin, Band i., No. 6, 1883.
[14] Lectures on Cerebral Localisation, 1890, p. 89.
[15] Archives of Medicine, New York, 1882, p. 80.
[16] Loc. cit., p. 634.

giving utterance to these, and even went so far occasionally, in order to indulge herself in noises to her heart's content, as to lock herself up when her teachers endeavoured to restrain her from so doing. These noises were, in fact, inarticulate—e.g., a kind of chuckling or grunting, an expression of contentment; while others—e.g., "h-o-ph-ph"—were better formed, and served for an indication of astonishment. Other sounds, again, she elevated to the dignity of names, and bestowed them on certain persons. She uttered these latter when those so denominated approached her, or when she wanted to find them, or even at times when she only thought of them. She employed some fifty or sixty such sounds as names, many of which could be written down, such as fu, tu, pa, fifpig, ts, pr, lutt, &c.; many, however, it would be almost impossible to express in letters. She formed, however, only words of one syllable, but frequently re-duplicated them two or three times, as fu-fu-fu, tu-tu-tu.

There was therefore slowly developed in this child something more of method in the use of the simple or complex sounds that were uttered than has been met with in the early stages, or for some time after the onset, of the cases of disease in which both auditory word-centres have been destroyed. The sounds emitted were also less voluble and free, which is only to have been expected, seeing that in Laura Bridgman the glosso-kinæsthetic centres had never been developed as they have been in the case of patients who, by reason of the lesions above mentioned occurring in adult life, have been reduced to a condition in which their speech has become unintelligible. The powerlessness of Broca's centre when unaided for the production of anything like intelligible speech is, however, clearly shown.

After the narration of these additional cases in which there was a destruction of the auditory word-centre in each hemisphere we may now with more advantage return to the question why in a certain number of the cases of destruction of the left auditory word-centre alone there is (1) an aphasic loss of speech, in others (2) paraphasia, and in still others (3) a comparatively slight impairment in voluntary speech.

My original contention was that an aphasic loss of speech is what is naturally to be expected as a result of such a lesion, if we are to suppose, as seems highly probable, that the auditory word-centre in the great majority of persons holds a relation to Broca's centre similar to that which the visual word-centre holds to the writing centre. It would appear, therefore, that what stands in need of explanation is the occurrence of the second and third class of cases—namely, those in which more or less marked paraphasia, or even fair speech, has existed.

The evidence in favour of the posterior half of the upper, with perhaps the posterior part of the middle, temporal convolutions being the chief, if not the exclusive, seat of the auditory word-centre must be regarded as very conclusive.[17] The difference in voluntary speech power presented by the cases above referred to cannot therefore be explained by the supposition that the auditory word-centre has not yet been properly localised.

The various possibilities that suggest themselves to me in explanation of the differences in the degree of impairment of speech in different cases in which lesions have been found in the left auditory word-centre are as follows:—

(*a*) There is the possibility that in some of the cases in which the word deafness has been complete whilst voluntary speech has been fairly good the auditory word-centre has been rather isolated from its afferent fibres than destroyed. These would be cases in which the amount of damage to the auditory word-centre itself was small—cases approaching those named by Lichtheim "isolated speech-deafness," which will be subsequently considered.

(*b*) Then in some cases the auditory word-centre may be damaged sufficiently to prevent perfect comprehension of speech, though it may still be sound enough with the aid of the visual word-centre for the production of paraphasic speech. This might afford an explanation of certain cases in which there is only partial damage of the auditory word-centre, together with incomplete word-deafness, as in No. 7 in Amidon's list, and Nos. 2 and 48 of Mirallié's list, as well as in a case by West,[18] which is not included in either of them.

(*c*) In other cases, where the individuals affected are strong "visuals," the paraphasic speech may be produced by the action of the visual word-centre taking the place of the auditory word-centre—that is, by the passage of the stimulus directly from the visual word-centre to Broca's region across the commissure *c c*, as represented in Fig. 5. Such an explanation may be applicable to some of the cases where the destruction of the auditory word-centre has not produced word-blindness as well as word-deafness. And this, as we have seen, has been what has occurred in about two-thirds of the recorded cases.[19]

There is one extraordinary case that has been recorded by Pick[20] which seems, moreover, quite incapable of being understood except by the supposition of the adequacy of the direct action of the visual word-centre upon Broca's region even for the production of correct speech—as it is brought about, in fact, in all deaf-mutes who are taught to speak. This is the case of lesion in the upper temporal convolutions of each hemisphere, the consideration of which was deferred because of its altogether exceptional character. Although this patient was perfectly word-deaf, he was able to speak correctly, to read correctly, and to comprehend writing perfectly, as may be gathered from the following details.

CASE 30.—A day labourer, aged twenty-four years, was completely word-deaf and behaved like a deaf person, taking no notice of ordinary sounds near him. It was found that he only noticed loud calls, clapping, or ringing of bells, and this not always readily. Yet if one shouted to him unexpectedly, he said, angrily, "Don't shout at me so"; and he often said spontaneously, "I hear quite well but I don't understand; I can hear a fly flying past me." His power of recognising airs previously known to him seemed to be also lost. His speech was perfectly correct. He spoke fluently, and only occasionally hesitated about the right word. He named objects shown to him correctly. He could not repeat words or phrases. Writing was executed slowly but quite correctly, though he could not write from dictation. With regard to his power of copying nothing could be stated, as he could not be persuaded to make the attempt. He read aloud easily and quite correctly, and he understood both print and writing perfectly. Writing afforded the only means of communicating with him apart from gestures. The patient's condition in the above mentioned respects remained essentially unchanged during the whole period of his stay in the hospital, from Jan. 17th to May 12th, 1891. At the necropsy the upper parts of both temporal lobes were found to be shrunken, soft, and of a yellow colour. On the left side the posterior half of the upper temporal convolution and the supra-marginal gyrus were the parts that were softened. The island of Reil was intact. On the right side there was softening of the upper temporal convolution and a great part of the second temporal, as well as of the island of Reil, together with some small foci in the lower part of the ascending frontal, and in the third frontal, convolution.

It appears from the history of this patient that the first lesion occurred on the right side of the brain about ten years before his admission to the hospital. Six years later the lesion in the left hemisphere occurred, which resulted in the production of word-deafness. Speaking of this patient's condition during the four months that he was under observation Pick says that his intelligence was distinctly weakened and his behaviour childish. It was difficult to fix his attention; he was very emotional and spent much time in prayer. When so engaged no sort of noise seemed to disturb him, for, notwithstanding what he said as to his hearing, it appears that, like Lichtheim's patient,[21] he was also really very deaf to ordinary sounds. As above stated, there seems no way of explaining this case except by supposing that the left visual word-centre was capable of acting directly upon Broca's centre, and without any aid from the left auditory word-centre (the destruction of which had caused the word-deafness four years previously) of acting so effectively that the patient was capable of reading aloud and of speaking, even without making mistakes in words. The word-deafness was clearly caused by the lesion in the left auditory word-centre itself, and it seems equally certain, therefore, that this centre could not have been instrumental in enabling the patient to speak. It is superfluous, consequently, to look for a sub-cortical lesion.[22]

(*d*) Another possibility in explanation of the preservation of slight or disordered speech after destruction of the left auditory word-centre is that the auditory word-centre of the right hemisphere acts, by means of commissural fibres passing obliquely through the corpus callosum, upon the left third frontal convolution. This is a possibility which has not, I believe, been previously suggested by any writer on speech defects, though it seems to me almost the only means of accounting for the existence of speech of a paraphasic type in those cases where the destruction of the left auditory word-centre leads to word-blindness as well as to word-deafness—that is, in about one-third of the total number of such cases. The addition of word-blindness as a symptom in these cases must, as I have said, be supposed to

[17] On this subject see Ferrier on Cerebral Localisation, 1890, and C. K. Mills, in Brain, 1891.

[18] Brit. Med. Journ., vol. i., 1885, p. 1242.

[19] The next explanation is, however, equally applicable to this class of cases as well as to those in which word-blindness co-exists with the word-deafness.

[20] Archiv für Psychologie, 1892, p. 909.

[21] Loc. cit., p. 460

[22] Yet Mirallié actually quotes it as an example of a sub-cortical lesion

be due to the very close functional and topographical relations of the auditory and the visual word-centres; but if the visual word-centre has had its functional activity so deranged as to have led to word-blindness it cannot reasonably be supposed that it could in that state take on independent functions in the way of supplementing the activity of the destroyed auditory word-centre.

The argument in favour of the possible action of the right auditory word-centre in the manner indicated is, however, even stronger than that just stated, because we shall find in a future section, when dealing with cases in which there has been more or less complete destruction of both the auditory and the visual word-centres of the left hemisphere, that out of fifteen of such cases, in two speech is reported to have been fairly good, in seven there was jargon speech or paraphasia, whilst in six it was more or less markedly aphasic. But when the auditory and the visual word-centres of the left hemisphere are destroyed speech, if it is to be produced by that hemisphere alone, would have to be effected solely by Broca's centre. We have, however, already seen that with double destruction of the auditory word-centre, as well as with double destruction of the auditory and the visual word-centres, speech has always been rendered unintelligible, except in one single case—that of Pick, above recorded. It thus seems to stand out very clearly that Broca's centre alone is not capable of acting as an instigator and adequate guide for the production of intelligible speech. We have good reason for believing, moreover, as I have previously pointed out, that it is not a centre whose images are much used as counters for thought, although the rousing of the sub-conscious memories of this centre is, under proper guidance, essential for the production of speech as a series of voluntary movements.

We are therefore absolutely driven to look for aid or guidance from the right hemisphere if we are to account for the production of even paraphasic speech in cases of damage to the left hemisphere of such a nature that word-deafness is associated with word-blindness, whether the latter be of structural or of functional origin. This same hypothesis enables us to understand the unintelligible character of the speech in three out of the four cases cited of double destruction of the auditory word-centre, as well as in the case in which the auditory and the visual word-centres were destroyed in each hemisphere. The old notion that intelligible speech can be initiated and produced by the influence of Broca's centre alone must be absolutely renounced.

By reference to other considerations it may also be shown to be by no means devoid of probability that both auditory word-centres are actually in structural relation with, and therefore capable of acting upon, the glosso-kinæsthetic centre of the left hemisphere. It will not be difficult to show that the notions hitherto prevalent in regard to the understanding of spoken and written language and the utterance of speech have probably left altogether too much out of account that conjoint activity of the right and left hemispheres which almost certainly exists in connexion with perceptive processes, and which therefore we may suppose exists in connexion with derivative intellectual processes, as well as during the initiation of all sorts of motor reactions directly or indirectly following thereupon.

It is well known that each olfactory bulb and that each retina is connected with both cerebral hemispheres. Modern knowledge compels us to believe that in every act of visual perception the half-vision centres in each occipital lobe are called into concurrent activity. It would be contrary to existing knowledge for us to suppose that the cochlear fibres of the auditory nerve come into direct relation with each hemisphere, although Lichtheim does make an assumption to that effect.[23] On this subject of the intra-cerebral distribution of auditory fibres Foster says[24] the evidence derived from "secondary degenerations" "suggests that the path of auditory impulses is along the cochlear nerve to the lateral fillet of the crossed side, and so by the posterior corpus quadrigeminum and median corpus geniculatum to the cortex of the temporal lobe of that crossed side." Still, this distribution cannot yet be considered quite settled, so that, as Foster adds, "the matter needs further investigation."

The probabilities are, however, that each auditory nerve is indirectly connected with each hemisphere through the intermediation of commissural fibres between the two upper temporal and other convolutions in each temporal lobe, constituting the cortical seat of this endowment—such commissural fibres forming part of the corpus callosum.[25] In this way, therefore, a provision exists for the conjoint activity of the two hemispheres in connexion with the sense of hearing. In healthy persons auditory impressions pass equally to the two sides of the brain, and it is commonly supposed that minute differences in intensity of the impressions, dependent upon the source of the sound in relation to us, enable us principally to judge of the direction whence the sound emanates. Although we have no distinct proofs other than those of an analogical order that the general auditory centres are connected by commissures, we have proof that the specialised portions of them known as auditory word-centres must be so connected. Had it not been for the existence of such a connexion word-deafness would result from absolute deafness in the right ear (whether due to labyrinthine or to middle-ear disease), owing to the left auditory word-centre being cut off from all afferent impressions, as I pointed out some years since.[26] We know, however, that this does not occur; therefore impressions must reach this centre through the left ear, the right auditory word-centre, and thence across the commissure in the corpus callosum. And the fact that in such cases the comprehension of speech seems not to be diminished would point, I think, to the probability that the right auditory word-centre is about as well developed as the left on its receptive side.[27] And if that be so, is it to be supposed that it would remain functionally inert, save in the case of the accidental supervention of right-sided deafness?

Clinico-pathological investigations have long since taught us in an unmistakeable manner that the right auditory word-centre usually exercises (in right-handed persons) little influence upon the glosso-kinæsthetic centre of its own side; and now I would urge that new clinico-pathological observations should strongly incline us to believe that it must to some extent coöperate with the left auditory word-centre in the excitation of Broca's region for the production of articulate speech. We have seen that instances of paraphasic speech in cases of word-deafness associated with word-blindness are only capable of being explained in accordance with some such hypothesis, and there is the additional fact that speech has been found to be so much worse (with one exception) as to be quite unintelligible when both the auditory word-centres have been destroyed.

A difficulty that presents itself in connexion with such views as I have just been expressing is to account for the non-production of any amount of word-deafness from disease of the right auditory word-centre alone. It might be thought that even if the left auditory word-centre exercises an altogether preponderant influence in connexion with the comprehension and the production of speech, still the destruction of the auxiliary right auditory word-centre ought to produce effects of some kind, of a temporary if not of a permanent nature. Extremely little evidence, however, is available upon this subject, and it is one to which most careful attention should be given in the future.[28] We know, of course, that in left-handed persons the predominant activity of the auditory and the visual word-centres is in the right hemisphere, and that consequently in them we may get as a result of lesions in this hemisphere either word-deafness or word-blindness or both, just as we may get aphasia either alone or in association with left hemiplegia. Such cases of so-called "sensory aphasia" due to lesions in the right hemisphere have been recorded by Kussmaul[29] and also by Bernheim,[30] and there are doubtless many others. There was also a typical case of amnesia verbalis due to a right-sided lesion recorded by Trousseau.[31]

In what I have said hitherto I have only been contending

[23] Loc. cit., p. 483.

[24] Physiology, fifth edition, 1890, p. 1089.

[25] The anterior commissure seems mainly to connect the convolutions of the tip and under surface of the temporal lobe, so that it is more probable that its upper and posterior regions should be brought into structural and functional relation through fibres of the corpus callosum.

[26] Paralyses: Cerebral, Bulbar, and Spinal, 1886, p. 267.

[27] On this subject see what has already been said towards the end of the last section but one of the first lecture.

[28] What has just been said concerning the right auditory word-centre applies almost equally strongly to the right visual word-centre. We want to know also to what extent and for how long the comprehension of written and printed words is impaired by destruction of the right angular gyrus and supra-marginal lobule.

[29] Ziemssen's Pathologie und Therapie, Band xii., 1876, p. 163.

[30] Revue de Médecine, 1885, p. 625.

[31] Lectures, translation by Bazire, pp. 253, 267. This is quoted in part as my Case 16.

for the existence of another special illustration of a general principle which has previously been strongly advocated by others—namely, that of the double representation of movements in each hemisphere of the brain. Indeed, for many years Hughlings Jackson has gone further still, and has advanced the speculation[32] "that all parts of both sides of the body are represented in each half of the brain." Definite evidence on this subject was brought forward by Goltz, who, at the Physiological Congress in Basel in September, 1889, showed a dog from which almost the whole of the left hemisphere had been removed, and from whose behaviour, as demonstrated to the Congress, he felt able to announce the following important conclusions[33]: "Each cerebral hemisphere is in connexion with the voluntary muscles of both halves of the body. It appears, however, that the connexion between one cerebral hemisphere and the muscles of the opposite half of the body is more convenient than that on the same side. Hence a dog whose left hemisphere is destroyed prefers to use the left paw, because the will impulses from the right hemisphere flow by more convenient paths to the left limbs." He showed that sensibility was also present, and only somewhat impaired, in the right limbs of this dog. On the death of the animal the brain was removed, and was subsequently submitted to a most thorough examination by Langley and Grünbaum, who, at the conclusion of their report, say[34]: "We have seen that in this dog there was on the left side no part of the cortex remaining except a small portion of the hippocampal convolution, and a little grey matter round the optic chiasma; that the left corpus striatum had been removed, and that the nerve cells of the left optic thalamus had degenerated. Notwithstanding this, it appears from Professor Goltz's account that the animal retained voluntary power over all its muscles and could feel in every part of its body." So far as the production of movements is concerned, these results are harmonious with the well-known results obtained by Franck and Pitres,[35] who, after removing the so-called motor cortex on one side in a dog, found on faradaisation of the opposite cortical region that a convulsion was produced which involved first the limbs of the opposite side and then those of the same side of the body. Although this evidence tends in the same direction, it is not nearly so conclusive as that of Goltz.[36]

There is likewise actual evidence tending to show that in man also all movements are to some extent represented in each hemisphere of the brain. The representation of bilateral movements, as Broadbent originally pointed out, is commonly pretty equal, whilst that of limb movements is very unequal, being strong for the independent movements of the opposite limb and weak for the corresponding movements on the same side of the body. In support of this double cerebral representation there is the well-known fact that in hemiplegia some amount of paresis exists also on the opposite side of the body (that is, on the side of the brain lesion). There is also the well-known fact that in cases of large lesions in one hemisphere occurring in early life defects of sensibility are often even more thoroughly recovered from than the motor defects.[37]

What has already been said tends to show that bilateral arrangements of different kinds exist in the brain more or less analogous to that which I now postulate, namely, that Broca's centre is connected with both auditory word-centres—very intimately with the centre of the same side, and less intimately with that of the opposite side. The fact, moreover, that there are half-vision centres only in each hemisphere would seem to make it highly probable that for the voluntary performance of movements of one hand and arm, as in writing, there must in undamaged brains also be concurrent activity of these two centres brought to bear upon the cheiro-kinæsthetic centre during the conception and voluntary initiation of the movements. It has long been known that a functional activity of the visual centre is as essential for the conception and initiation of voluntary limb movements as a functional activity of the auditory centre is for the initiation of the voluntary movements concerned with speech. It would seem, therefore, as if in each case we have double auditory or double visual centres exercising their influence upon a kinæsthetic centre in the left hemisphere, in which speech movements have been registered in the one case and writing movements in the other.

The existence of the kind of nervous arrangements that I have been endeavouring to indicate in the two hemispheres would clearly necessitate the presence of numerous fibres in the corpus callosum having an oblique direction, in addition to those that are more directly transverse. It is well known that for long Meynert's view was generally accepted, to the effect that the fibres of the corpus callosum only serve to connect similar regions in the two hemispheres. By the careful study of the course of "secondary degenerations" in the corpus callosum resulting from lesions of different parts of the cortex Sherrington has, however, shown that this was an erroneous view. He has found[38] that not only similar but dissimilar parts of the two hemispheres are connected through this commissure. In regard to some inquiries of mine concerning this subject Sherrington writes: "My evidence was in part, as you suggest, the obliquity of the fibres, and also in part the spreading of them. ..... I found the degenerations from even circumscribed lesions of the fronto-parietal cortex spread considerably, especially after crossing the corpus callosum. I saw nothing at all incompatible with what you urge, but anatomically everything in favour of it."

There is another point of great interest in this connexion, and that is the greatly increased development of the corpus callosum in man as compared with that in the brain of the great man-like apes. We have it on the excellent authority of the late Professor Marshall[39] that the bulk of the corpus callosum, in proportion to the size of the brain, is twice as great in man as it is in the chimpanzee. It is only fair to assume that this relatively enormous increase in the comparative bulk of the corpus callosum is due in large part, either directly or indirectly, to man's acquirement of language and all the mental and moral development that has grown out of it.

(4) Defects Resulting from Isolation of the Left Auditory Word-centre.

A clinical condition is produced by the isolation of the left auditory word-centre—that is, by the cutting it off from all its afferent fibres—which was first described by Lichtheim in 1884,[40] upon the basis of a single case of word-deafness that seemed to differ from all others that had been previously recorded. To this condition Lichtheim gave the name of "isolated speech-deafness." It has been spoken of also by Wernicke as "subcortical word-deafness," whilst lately a similar condition has been described by Déjerine (who seems to have been oblivious or unaware of Lichtheim's case) under the name of "pure word-deafness." The state itself is simple enough, though an extremely interesting one. It is the condition of a partially deaf man, the deafness being not general, but limited to word-deafness. The patient can hear ordinary sounds, though more or less badly, he can talk correctly, can write correctly, can read aloud, and understand what he reads. His three disabilities are that he is unable to comprehend spoken words, and that he is consequently unable either to repeat words or to write from dictation.

I cannot agree with the pathology of the affection as given by Lichtheim or with that advanced by Déjerine. Lichtheim says[41]: "Both ears are capable of receiving and transmitting excitations of speech, but intelligence of language is bound up with the activity of the left hemisphere only, so both acoustic nerves must enter into relation with the latter." Thus the affection we are considering, he adds, "can obviously come into existence only if the irradiations of both acoustic nerves in the left temporal region are broken through." He concludes that the union of these two tracts takes place in the cerebral hemisphere above the level of the

[32] Brit. Med. Jour., vol. i. 1884, p. 593.
[33] Journal of Physiology, 1890, p. 608.
[34] Loc. cit., p. 634.
[35] Archives de Physiologie, Aug. 15th, 1883.
[36] It has been shown by Sherrington and others in their studies of "secondary degenerations" that some of these double motor effects may be accounted for by the distribution in the cord of the fibres of the pyramidal tracts. It is known also that Broadbent explains some of the bilateral movements by reference to commissures existing between functionally related bilateral centres in the cord. But the voluntary movements of the right fore-paw in Goltz's dog must have implied the development in the only existing right hemisphere of the animal of all the nervous arrangements needful for the "conception" of separate movements in this right limb, that is, the passage to it and registration of kinæsthetic impressions from this limb, as well as the bringing of this centre into relation with the visual centre, in the manner that would be needful for the production of its voluntary movements.
[37] Paralyses: Cerebral, Bulbar, and Spinal, 1886, p. 262.
[38] Journal of Physiology, 1889, p. 429.
[39] Natural History Review, vol. i., p. 236.
[40] Brain, January, 1885, p. 460.
[41] Ibid., January, 1885, p. 482.

internal capsule, and he believes it to occur somewhere in the white matter of the temporal lobe. A lesion in this situation, therefore, cutting off, as he assumes, the afferent fibres of both auditory nerves on their way to the left auditory word-centre, is the explanation that Lichtheim gives of the production of "isolated speech-deafness." Déjerine's view is still less satisfactory, as he speaks only of a severance of one set of afferent fibres proceeding to this centre.[42]

In regard to these explanations it may be said that the view of Déjerine is certainly insufficient, since, as I have already observed, it is well known that the cutting off of the afferent impressions going to the brain from the right ear alone does not give rise to word-deafness. Lichtheim's explanation, on the other hand, is unsupported by any anatomical facts showing the distribution that he assumes to exist, which would really be that of a semi-decussation of the auditory nerves, since, after speaking of his imaginary arrangement on the left side of the brain, he adds in a footnote, "a similar distribution must obtain in the right hemisphere." Both Lichtheim and Déjerine seem to think that the right auditory word-centre is either non-existent or possessed of no functional activity, and consequently that it is not brought into relation with the left auditory word-centre. They seem also to hold similar views as to the absence of a visual word-centre in the right hemisphere. If these views were correct, surely such convolutional regions in the right hemisphere ought to show some distinct diminution in size and development as compared with those of the left side. But no one as yet seems to have noticed anything of the sort.

There was no necropsy in Lichtheim's case of "isolated speech deafness," and from the particulars given it seems clear that the patient was generally rather deaf, altogether apart from his word-deafness. Thus my interpretation of this case some time since, after a careful study of its details, was that there probably existed pretty complete deafness on the right side, cutting off the left auditory word-centre from its proper incitations, whilst the slight sudden brain attack that is recorded to have occurred in June, 1882, may in some way have destroyed the commissural fibres connecting the left with the right auditory word-centre. In this way we should have the isolation of the left auditory word-centre brought about without the necessity for postulating the existence of any hypothetical and altogether unproved distribution of the auditory fibres within the brain. We should, in fact, have to do with a man partially deaf, capable of hearing noises only, but not able to perceive the meaning of spoken words—owing, on the one hand, to the complete isolation of the left auditory word-centre from all sounds; and, on the other, to the inadequacy for this purpose of the right centre alone, because of the imperfect development of associational fibres in connexion with speech functions in this hemisphere. This view has since been rather confirmed by the record of another case by Sérieux,[43] in which it is definitedly stated that the patient was absolutely deaf on the right side, as a sequence of an old otitis. The following are a few brief details concerning this case.

CASE 31.—The patient was a woman, aged fifty-one years. She had been suffering from partial word-deafness for six years. There was a complete absence of word-blindness, of motor aphasia, and of agraphia. Her hearing was normal on the left side, but absent on the right by reason of an old otitis. There was musical amnesia, the patient being unable to recognise or to sing certain airs. There was incomplete word-deafness; and writing from dictation was defective. There was slight paraphasia and paragraphia in spontaneous speech and writing. Comprehension of written language was slightly affected. There was progressive development of symptoms; especially subsequent to another slight cerebral attack, after which the word-deafness became complete and the power of writing from dictation was lost. Her spontaneous speech and writing still remained incorrect. Reading aloud was possible, but most frequently without comprehension of what was read.

Strangely enough it has been found that a very similar clinical combination may be produced in quite a different way, as may be seen by reference to the very remarkable case, previously cited from Pick, of destruction of the auditory word-centre in each hemisphere. Here the clinical condition was almost identically the same. There was even a certain amount of general deafness, though it was not due to middle-ear disease, nor did it seem to be definitely localised to one side. As I have already said, this case seems absolutely inexplicable unless we are to suppose that the patient was a "visual" who could speak, write, read aloud, and understand wha he read, mainly through the activity of the visual and the kinæsthetic word-centres—at all events without the coöperation of the auditory word-centres, seeing that these were destroyed. The case shows, moreover, that general deafness does not result from destruction of these special word-centres even in both hemispheres. The patient's general hearing power was defective, though far from lost.

These are the only three cases of "isolated word-deafness" known to me.[44] It will be seen from what I have said that this rare group of symptoms is capable of being induced in two very different modes—just as we shall find subsequently that what Déjerine has called "pure word-blindness" may also be produced in two different modes, and that the modes are analogous in the two cases. Pick was fully aware of the very unusual nature of his case. He recognised that it could not be a case of sub-cortical word-deafness of Lichtheim's and Déjerine's type, though he was not prepared to advance any other interpretation. Mirallié, however, has been so very uncritical as to cite it[45] as an example of Déjerine's type, notwithstanding the fact of the existence of the double cortical lesions occupying the sites of the auditory word-centres.

(To be continued.)

[42] Mémoires de la Société de Biologie, 1891, p. 112.

[43] Revue de Médecine, 1893, p. 733. It is quoted also by Mirallié (loc. cit., p. 190).

[44] Though Wernicke says a few words concerning a case that had come under his observation (see Fortschritte der Medicin, 1886, p. 474).

[45] Loc. cit., p. 171.

TWO CASES OF

INTUSSUSCEPTION SUCCESSFULLY TREATED BY LAPAROTOMY; ONE PRESENTING SEVERAL UNUSUAL FEATURES.

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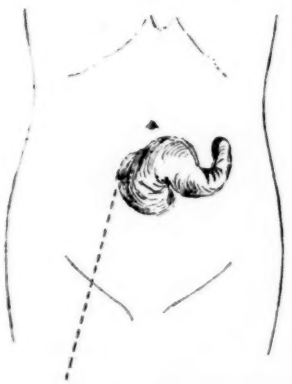
OF the following cases the first is of special interest, more from the suggestive nature of some of the symptoms than from the numerous risks which the little patient successfully surmounted.

CASE 1.—A girl, aged eight years, the subject of a perfectly controlled right inguinal hernia, was admitted into the Leeds Infirmary under Mr. Mayo Robson on Aug. 7th, 1896, and in his absence came under my care. Seventeen days before, when at school, she was seized with pain in the abdomen during defecation. From that time vomiting had been constant and pain intermittent. Actions of the bowels were obtained on the sixth and eleventh days, and the motions contained neither blood nor mucus. Though flatus was passed occasionally, the abdominal distension had gradually increased. Two days before admission all her symptoms were aggravated and the obstruction became apparently complete. When first seen on the evening of Aug. 7th there was great abdominal distension and general tympanites. Vigorous visible intestinal movements could easily be excited, but no tumour could be felt. The tongue was moist and furred, the pulse was 140, and the intelligence was clear. The condition to be dealt with was obstruction, not strangulation, and the patient's condition was critical; so enterotomy, to tide her over the immediate danger, was decided upon in case there was any difficulty in finding the cause of the trouble. On opening the abdomen in the middle line the distension produced by the enlarged small intestine was so tight that the utmost difficulty was experienced in insinuating the fingers between it and the parietes to explore the hernial orifices and the cæcal region. Nothing suspicious was detected, and to have done more some of the coils of bowel must have been brought outside the abdomen, a proceeding which I feared would be likely to add very greatly to the severity of the operation. A knuckle of small intestine was therefore selected and fastened in the lower angle of the wound, which was then closed. The bowel was opened at once and a Paul's tube inserted. The operation did not take long, and the patient stood it well. Perfect relief was obtained, and the patient's general condition quickly improved, but she remained subject to spasms of pain—less severe, certainly, than before, but sufficient to wake her during sleep and to call for the administration of opium at times. When the distension had completely

subsided a distinct thickening could be felt in the right iliac and lumbar regions, and the resonance over it was much impaired. The character of the swelling varied, being sometimes soft and almost imperceptible, and at other times (especially after examination) hard and distinct, when the abdominal surface became slightly raised, as if the bowel underneath were in excessive peristalsis, and pain was complained of in the tumour and down the right thigh and over the instep. The diagnosis of intussusception was made, and it was soon evident that it was permeable, for on the 17th there were two evacuations by the rectum, one of which was slightly streaked with blood. Some delay in dealing with the tumour now occurred in attempting to improve the surface of the abdomen, which had become raw over a large area. The last plan tried was the insertion of a Paul's tube to lead away the fæces through the dressings, but one night it slipped in and was lost. For the next thirty-six hours the patient was kept lying on the left side to prevent the right from being soiled, and on Sept. 3rd the following operation was performed under A.C.E. mixture. The artificial anus was plugged and the abdomen, especially the right side, was carefully cleansed with soap and carbolic lotion, and then with benzine, and finally washed with carbonate of soda solution and soap. Pieces of gauze were then spread over the artificial anus and the raw surface on either side of the intended incision. This was four inches long and extended from one inch below the costal margin to a point inside the anterior superior spine, external to the right linea semilunaris. On opening the peritoneum the large bowel was found with the small intestine invaginated into it. At this point there was some congestion, and strands of lymph were stretched between the two portions of bowel. The cæcum and vermiform appendix were not involved in the tumour, which was about ten inches long. The apex of the intussusception was brought to the surface, and by pressing up the lower end of the invagination reduction was quite easily accomplished; numerous bands of stringy lymph, which united the two opposed serous surfaces, being ruptured as the outer layer peeled down from the tumour. The invaginated bowel was small, much contracted, and reddened, and showed the results of plastic peritonitis; the mesentery was congested and puckered by adhesions. About six inches above the ileo-cæcal valve a thickened lump projected from the inner surface of the bowel opposite to the mesenteric attachment. This was no doubt the presenting portion of the invagination, which was of the ileo-colic variety. The Paul's tube was sought for and found, and as it could not easily be passed back through the artificial anus it was passed on through the bowel that had been reduced and left at the top of the ascending colon. The wound was sutured in layers and dressed with collodion and gauze. At the moment when the tumour was brought to the surface and put somewhat on the stretch and during its manipulation the patient became very pale and collapsed, but an ether injection helped her, and at the close of the operation her condition was satisfactory. From this operation the child made a good recovery, except for some suppuration about the wound, which eventually became soundly healed. She was completely relieved of "the pain in her inside," and the bowels acted by the rectum occasionally up to Sept. 23th, when a spur had formed. On Sept. 13th, as she had been complaining of spasmodic pains, she was anæsthetised to see if the Paul's tube could be detected. It was found where it had been left. The opportunity was taken to close the artificial anus by dissecting the edges down, inverting and suturing them. The union had completely broken down on the 18th, but the fæces had passed along the colon for at least three days, and the Paul's tube came away after an injection on Oct. 6th. In October a remarkable series of events took place. For some time the child had been suffering from colicky pains, for which it had been necessary to give opium occasionally. These pains increased in severity, and by Oct. 20th a protrusion of the bowel had appeared from the artificial anus on seven occasions, usually after an exacerbation of the pains. It generally attained a length of three or four inches, was usually in a state of active peristalsis, was firm and solid, and in appearance was exactly like the intussusceptum of an invagination. Its reduction was on several occasions so difficult that an anæsthetic had to be given. I was only fortunate enough to see the protrusion once, when it lay upon the surface of the abdomen with the sigmoid curve represented in the sketch. An inability to obtain a probe at the moment prevented me from settling its real nature—whether prolapse or intussusception—before reducing it; and, unfortunately, I never had another opportunity, nor am I aware that the investigation was ever made. These protrusions came sometimes from the upper, and on two occasions at least from the lower, segment of bowel. This point was settled by the escape of fæces from the apex in some instances, and in others, when the lower segment was affected, by their discharge at the root of the outgrowth. On the latter occasions the prolapsing gut would disappear down the aperture on one side of the spur, whilst fæces would pour away from the opening on the other. But a still more interesting fact was noticed on Oct. 16th, when the swelling appeared from the upper



portion. The Sister attempted to return it, but only succeeded in diminishing it by half an inch. When Mr. R. H. Trotter arrived twenty minutes later it was about an inch long. As soon as it was uncovered spontaneous reduction began and the tumour disappeared without being touched. It was in active peristalsis the whole time, and the reduction took place from the end, the outer layer being continually inverted at the apex until the whole had disappeared. On Oct. 20th, with some misgiving in consequence of this peculiar behaviour of the intestine, I proceeded to perform enterectomy for the closure of the artificial anus. The edges of this aperture were first separated, and then carefully closed over a plug of gauze with a continuous suture. The raw abdominal surface was next cleaned with the same precautions as before, and covered with gauze around the intended incision. The abdomen was then opened, the intestine isolated from its attachments to the parietes, and a loop containing the artificial anus was clamped with india-rubber tubing. Two inches of intestine including the opening, were cut away, and the divided ends sewn together over a Mayo Robson's bobbin. The wound was then closed. Nothing was found in the appearance of the bowel close to the part resected to explain the tendency to protrusion. The patient did well uninterruptedly. Ether sickness persisted for thirty-six hours and then fluid food was retained. Nepenthe was twice ordered for pain connected with the operation, but after the first day it was evident that the child was greatly relieved. She slept peacefully, and was not roused by spasmodic pains as she had been before the operation, even when taking opium regularly—indeed, she did not complain of pain at all. She was happy and cheerful, and gained flesh daily. The bowels were moved on the second day and have acted regularly since. The bobbin came away on the fourth day. The wound was healed on Nov. 11th. The patient was up on the 14th and went home on the 21st, and remains well. I gratefully acknowledge the help received in the course of the case from several of my colleagues, the resident surgical officer (Mr. Basil Hall), and particularly from the house surgeon (Mr. R. H. Trotter), upon whose careful observations and notes much of the interest of the case depends.

CASE 2.—Late in the evening of Nov. 14th, 1896, I was asked to see a boy, aged eight years, who had been admitted into the Leeds Infirmary under Dr. Chadwick on the previous afternoon. He was suffering from all the typical signs of acute intussusception. The vomiting, which had been severe so long as nourishment had been taken, had moderated.

The pain had kept him awake all the previous night and at times was so severe as to make him cry out. Numerous evacuations containing blood-stained mucus and no fæces had been passed, and a tumour could be felt just below the splenic region. This was sometimes soft and at others hard, and when in this latter condition it formed a visible swelling as big as an orange. There was no abdominal distension, the pulse was 130, and the patient was in fair condition, though the onset had occurred with sudden pain before breakfast on the 10th, and the symptoms had been acute from the commencement, the vomiting and bloody stools beginning almost directly after the first attack of pain. At midnight, therefore, on Nov. 14th, he was put under A. C. E. mixture, and inflation was performed with a Higginson's syringe. As this proceeded, and the large intestine became distended, the tumour was excited to very powerful peristalsis. It gradually appeared as a curved mass with one extremity above and to the right of the umbilicus, and the other dipping down into the left lumbar region. It stood up on the surface of the abdomen as a sharply defined, firm, bossy swelling of considerable elevation. Its length was quite six inches, but it was subsequently found that the whole of the tumour could not have been visible. As inflation progressed its only effect was to make the mass stand up more vigorously; so it was discontinued, when the swelling gradually faded away. After the usual preliminaries the abdomen was at once opened by a median incision three inches long, beginning a little above the umbilicus. The descending colon was found at once and traced up until the tumour could be felt. The fingers of the right hand in the abdomen then compressed the ensheathing bowel upon the invagination, and, gradually, inch by inch, the colon came down from it as the apex was pushed up. When some inches had been drawn down in this way the presenting portion could be brought into the incision and its dark colour recognised through the healthy bowel covering it. The neck was now sought for by the left fingers and found deeply situated against the spine and very firmly fixed there. The tumour at this stage felt to be six or seven inches long and much thicker than the lower part when first grasped, as if the intussusception had been simply crowded up into a smaller space. However, as the process was continued the tumour was felt slowly to diminish, and when only about one and a half inches remained it became more moveable but more difficult to unroll. It was now easily brought into the wound and the disinvagination completed in sight, some difficulty being caused by the stiffness of the presenting part. This was a disc-like portion of the bowel rather larger than a shilling, situated away from the meso-colic attachment, convex towards the lumen, and concave externally. It was so stiff that it felt as if any attempt to press out the concavity would crack it. This disc was situated in the large intestine, which, both above and below, was much thickened and altered in colour from the congested interior showing through the peritoneal covering, which also presented signs of inflammation. The intussusception was therefore of the colic variety, but no attempt was made to learn how far the presenting part was from the ileo-cæcal valve. Several ruptures of the peritoneal coat of the bowel were produced by the manipulations, but these were not touched, and as soon as the reduction was completed, and the soundness of the part last unrolled ascertained the abdomen was closed. The proceeding had been carried out almost entirely inside the abdomen, where the distension produced by the inflation had proved to be somewhat embarrassing. With the exception of an attack of bronchitis following the operation, the subsequent record is one of steady convalescence. Relief was complete. Vomiting stopped, fluid nourishment was retained, and a natural motion was passed within eighteen hours of the operation. A dull area was present in the umbilical region for some time and probably corresponded with the position of the thickened bowel. Healing was complete by Dec. 20th, the child went home on Jan. 2nd after the Christmas festivities, and he remained well at the time of writing.

Remarks.—When a condition such as intussusception shows so high a percentage of cases as 62 in which no obvious exciting cause can be detected it presents at least a fair field for speculation. According to the figures given by Mr. Treves[1] about half the remaining 38 per cent. owe their origin to some local trouble, whilst some ailment, the influence of which is doubtful, is usually associated with most of the others. When no gross explanatory lesion is forthcoming it is only natural that we should turn to the nervous system for inspiration, for the movements of the intestines are under the influence of a somewhat complicated piece of nerve mechanism, a description of which is given in Foster's "Physiology," Part ii., p. 491. To anyone interested in the etiology of intussusception the section is very suggestive, and not the least so that portion of it which applies more particularly to the intussusceptions of the dying. It is sufficient for my purpose, however, to remind the reader that stimulation of the vagus gives rise to powerful peristaltic movements, or increases those previously going on, and that efferent impulses along this path may be excited by afferent ones, such as emotion, fear, or chill—to mention some which are matters of personal experience to most people. This reflex phenomenon is no doubt more readily produced in some than in others, and even in the same individual the ease with which it is excited may vary considerably and be largely influenced by the state of health and the consequent tone of the nervous system. It is of importance here because it is sufficient to explain those violent and irregular intestinal movements which are regarded as the predisposing causes of an invagination; and the fact that the subjects of intussusception noticeably belong to the category of weakly or delicate children, in whom the nerve functions are likely to be more than usually sensitive, does not diminish the probability that the exciting cause of many an invagination may be found in some peripheral irritation.

Now, there are some points in the first case that have a marked bearing upon this matter. First, for the sake of clearness, let it be understood that the protrusions which came from the artificial anus will be regarded as complete prolapses of the bowel, because such a condition would be less remarkable, and consequently more probable, than an intussusception.[2] The presence of the Paul's tube might have been thought sufficient to account for those manifestations had not the painful peristalsis and consequent prolapses increased in severity and frequency after its expulsion. Circumstances, however, point strongly to the conclusion that all the trouble was due to the frequent irritation of the raw abdominal surface by contact with the intestinal contents, for as soon as the enterectomy was performed and this could no longer occur, the painful peristalsis became a thing of the past. The association between prolapse and intussusception is so close (and particularly so in this instance, as will be seen from what is said below) that an influence which can lead to the one is probably quite capable, under suitable conditions, of giving rise to the other.

In the light of the present case there is nothing difficult to understand in that of a child, aged five years, mentioned in Mr. Treves's monograph, who died with an intussusception four days after a burn,[3] nor in the six cases collected by Leichtenstern, in which symptoms appeared after exposure to cold. If this reasoning is correct it should excite no surprise that the etiology of so small a number of cases of intussusception is cleared up by post-mortem examination, for it is more than probable that the real exciting cause of not a few is some external influence, often so slight as to be easily overlooked, or of such a temporary character as to be incapable of recognition by the children who are affected.

Mr. Golding-Bird[4] records a case in which a retrograde intussusception made its appearance on the surface of the abdomen through a patent Meckel's diverticulum. The cord had separated four days after birth and fæces had been discharged from the navel from that time. Mr. Golding-Bird refers to a paper by Barth,[5] giving about a dozen instances of prolapse and one of intussusception under similar conditions. These cases have a striking resemblance to the one under discussion, but the point to which I would draw particular attention is that the same form of surface irritation was certain to have been present in all.

The strong points of likeness that exist between the prolapses and the invagination in this case are due to the particular variety to which the latter belonged—viz., the ileo-colic. Mr. Treves has pointed out that this form originates in a different way from any other. It begins as a prolapse

[1] Treves: Intestinal Obstruction, p. 211.

[2] Golding-Bird: Transactions of the Clinical Society, vol. xxix.

[3] Dr. Heckford: THE LANCET, March 23rd, 1867, p. 362.

[4] Loc. cit., p. 34.

[5] Deutsche Zeitschrift für Chirurgie, 1887, vol. xxvi.

of the ileum into the ascending colon, which increases so long as the length of the mesentery permits it. When the ileum can prolapse no further the process changes, the cæcum and ascending colon being gradually inverted and the continued growth of the tumour taking place in the usual way. Here the second stage had not begun.[6] It is evident from this that in their nature and mode of origin the two conditions were practically identical. This identity is of special interest when viewed in connexion with the unassisted return of the prolapse which was witnessed upon one occasion. If a prolapse through an artificial anus can recede of its own accord, one lying loose in the capacious ascending colon can probably do the same. The possibility of spontaneous reduction of an intussusception is admitted and thought to occur not unfrequently, though from the very nature of the case actual proof is wanting. But the method by which it is accomplished can be gathered from this observation. A vigorous peristalsis occurs in the entering tube of bowel, and as the wave passes downwards succeeding lengths of longitudinal fibres contract and invert successive portions of the returning layer at the apex. In this way the intussuscepted bowel diminishes, and is finally reduced. If the methods of artificial and spontaneous reduction are compared an interesting difference is revealed. The surgeon disengages the bowel by peeling the sheath downwards off the intussusceptum, at the expense of the upper end of the returning cylinder, until reduction is completed; but the intestine produces the same result by the intrinsic action of the entering layer, which rolls the returning cylinder inwards at its lower end until the whole of it has disappeared and the invagination no longer exists.

Attention cannot fail to be attracted by the fact that in Case 1 reduction was easy of accomplishment after symptoms had existed for forty-four days. In Mr. Hutchinson's well-known case disinvagination was safely performed at the end of a month. But neither of these approaches the case recorded by Dr. Handfield-Jones and Mr. Page,[7] in which an invagination was reduced after a probable duration of three months.

The variety of the intussusception and the diversion of the fæces were no doubt the two contributing factors to this result in my first case. Had the intussusceptum been firmly grasped by the sheath, instead of lying rather loosely in it, the congestion would have been much greater and the inflammation of the opposed serous surfaces more intense and of earlier date; whilst the artificial anus probably prevented the continued growth of the tumour by the inverting of the cæcum and ascending colon, a circumstance that would quickly have been followed by acute symptoms. It has been pointed out that the absence of bloody stools may be due to strangulation of the invagination, and that consequently that important symptom is not to be relied upon as a trustworthy indication of the condition of the bowel. But if it be considered in association with the constitutional symptoms and condition of the patient it is a distinct help. If there be no blood-stained discharge from the rectum in a case of intussusception, it probably means either that the blood flow through the tumour has been suddenly stopped or that it has not been seriously affected. In the former case the usual signs of strangulation will quickly make their appearance; in the latter they will not. In this instance the absence of a blood-stained mucous discharge and of excessive tenderness about the tumour led me to hope that the opposed serous surfaces would not be found inseparable.

One other point is worth mentioning. On one occasion when the first patient was under an anæsthetic I introduced my finger through the artificial anus to feel the tumour bimanually, and was astonished at the facility it gave for exploring the abdominal cavity. So freely could the finger be moved about in all directions that for a moment I feared it might have got inside the peritoneum. The intussusception could be felt from its neck in the right iliac fossa to its os uteri-like apex near the gall bladder. The left loin and iliac fossa could be examined with equal ease, and no doubt the pelvis and higher abdominal regions could have been similarly investigated had I not felt that it is sometimes wise to set a limit to curiosity.

Leeds.

[6] Treves: Loc. cit., p. 173.

[7] Transactions of the Royal Medical and Chirurgical Society, vol. lxi., 1878.

HEPATIC FISTULA SUCCESSFULLY CLOSED AFTER SIXTEEN MONTHS.

BY D. M. MOIR, M.A. ST. AND., M.B., C.M. EDIN.,

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AN Armenian, aged twenty-seven years, while employed in railway construction at Selangor in the Straits Settlements about the middle of December, 1893, began to suffer from what eventually proved to be an abscess of the liver. He was admitted into hospital at Perak at the end of January, 1894. Early in March he was transferred to the hospital at Penang, where he was operated on for an abscess of the liver. Six weeks later he was discharged apparently cured, the wound having closed. He sailed for Singapore, but the wound re-opened on the voyage, and there was a copious purulent discharge. On arrival at Singapore he went into hospital, and a drainage-tube was inserted. The wound was again healed by the end of June. After remaining six weeks longer at Singapore the sinus reopened and again began to discharge pus. Accordingly he sailed for Calcutta, and was admitted into the Presidency General Hospital on Sept. 4th, 1894. No antecedent history of dysentery or drink could be elicited. On admission he was in rather a reduced condition, weighing only 123 lb. The liver was of natural size, but there was a hepatic fistula discharging unhealthy pus in the eighth intercostal space and pretty far back in the infra-axillary region. On Sept. 6th the first attempt to close the sinus was made. An incision was made to explore for dead bone, but the ribs were quite healthy. After a little manipulation the fistula was found to be very narrow, slightly tortuous, and six inches long. Its track was dilated so as to admit a long and narrow drainage-tube. On the 10th the patient was transferred to my wards, and he continued as my patient until he finally left the hospital in October, 1895. Syringing with iodine lotion and insufflation with iodoform were tried, but ineffectually. Then on Sept. 28th, 1894, an inch and a half of the eighth rib was resected in the region of the fistula. The channel was over six inches, very narrow (admitting only a fine probe or a knitting needle), and had dense walls which felt almost cartilaginous in consistence. In its course the fistula traversed the pleural cavity (the pleura being adherent around it), the diaphragm, and a considerable thickness of liver tissue near the upper surface of the right lobe. The track was dilated gradually with some difficulty, until, finally, a cavity was reached. The finger could just reach this cavity; but it was estimated, with the help of instruments, that it was about the size of a hen's egg, and that it had thick walls. A collection of pus, caseous material, and sloughy tissue was removed by a long-handled Volkmann's spoon. A drainage tube having a diameter of three quarters of an inch was inserted. For the next two or three days the patient suffered from acute epigastric pain, nausea, and vomiting; but after Oct. 1st there was no further trouble. Up to the end of November his physical condition was good, and he weighed 138 lb., having gained over a stone; but the fistula would not heal, and at this time was two and a half inches long. Although the discharge had become scanty it frequently contained bile and mucus for several days at a time—and the bile seemed to retard healing. Various solutions were tried for syringing the fistula—e.g., carbolic acid, perchloride of mercury, boric acid, thymol, iodine, iodoform in ether, and sulphate of zinc. The tube was gradually shortened, then smaller tubes were substituted, and finally when the fistula narrowed a strip of lint was inserted. Bark and ammonia and hypophosphites were given, and on several occasions sponge grafting was tried, but nothing succeeded. In December he began to lose ground again, and the length of the fistula varied from three to four inches. The discharge contained flaky pus, occasionally bile, and tenacious glairy mucus. The wound was syringed twice, sometimes thrice, a day. This improved the character of the discharge. A solution of nitrate of silver was once injected along the track; but it proved injurious, causing acute pain in the epigastrium, vomiting of bile and mucus, and an increased discharge of bile from the wound. Sulphate of copper was also applied without material benefit. On Dec. 18th an incision was made through the former cicatrix, and the fistula was slit up and dilated. The cavity

was now smaller and more shallow, and so could be better explored by the finger. The dense connective tissue lining the walls of the fistula and cavity for the entire length of the track was thoroughly scraped with a Volkmann's spoon and the débris removed; then the entire raw surface was well swabbed with a solution of chloride of zinc (forty grains to the ounce) and a large drainage tube was introduced. This operation was not attended with any serious hæmorrhage. That night and next day there were cough, bilious vomiting, and epigastric pain. The drainage-tube seemed to irritate the diaphragm, but after the first two days he had little pain or discomfort. In January, 1895, he began to improve again. The fistula became smaller and the discharge less; but still the dressings were often bile-stained. Quinine and iron, nitro-muriatic acid, and nux vomica were administered. During February his general health was excellent, but the fistula remained much the same. Syringing and insufflation were discontinued, and a probe covered with cotton-wool and dipped in compound tincture of benzoin was daily inserted in the fistula. This proved more efficacious than anything hitherto tried; still, the track would not close, and the discharge contained bile at intervals. In March the same treatment was continued and the discharge almost ceased, but the fistula was still nearly two inches in depth, so on March 22nd he was sent on a voyage to Singapore in the hope that the change and sea air might prove beneficial. He returned to hospital on May 24th. The trip had apparently done him more harm than good. He looked worse and said he had felt miserable all the time he was at sea. The sinus was two and a half inches long and had been constantly discharging bile, mucus, and pus. His weight was 131 lb. He was given a tonic mixture, the wound was dusted with alum and iodoform and a dry dressing of perchloride of mercury was applied. Early in June minute particles of nitrate of silver were inserted into the fistula, which remained about two inches long and continued to discharge bile occasionally. His weight rose to 136½ lb. On June 8th a probe heated red-hot was introduced and the walls of the track were thoroughly cauterised. This was the only operation which was followed by fever, and the febrile reaction was severe. Next day his temperature rose to 102° F., on the following day it varied from 100° to 104·2°, on the 11th from 101° to 104°, and on the 12th from 101·8° to 105·4° F. He was very restless and suffered from intense headache, and the discharge was profuse, greenish, and viscid. On that day he developed acute orchitis and epididymitis without any obvious cause. This was treated by free leeching and an evaporating lotion. By June 18th the fever had quite left him and he again began to improve, but the fistula had increased to three inches. The right testis remained large, and on the 22nd fluctuation was discovered, and his temperature again began to rise. An abscess in the globus major of the epididymis was incised and drained. He was given a mixture of strychnine and iron, with sulphate of magnesia occasionally, and powdered boric acid was applied to the fistula and a dry dressing. Early in July an emulsion of eucalyptus oil was injected into the fistula, which was again two and a half inches long. The track began to contract rapidly, and by July 8th the fistula was occluded and there was no discharge. The fistula was soon firmly healed and subsequently gave no further trouble. He remained under observation until Sept. 16th, when he was discharged feeling perfectly well and strong. But four days later he was re-admitted suffering from an anal abscess, which was incised on the day after admission and the wound healed readily. He was finally discharged on Oct. 7th, 1895, at which time the scar of the hepatic fistula was quite firm and the liver seemed sound. He went to Burmah, and I have heard nothing more of him.

Remarks.—This case is of some interest owing to its obstinate course, to the number of operations performed, and to the intercurrent complications. The persistence for sixteen months of a hepatic fistula, after an abscess of the liver was opened, illustrates the evil of the too early removal of the drainage-tube. Probably, also, too small a tube was used in the first instance. For the drainage of an abscess of the liver the larger the tube the better, and there should never be any hurry to dispense with the tube. *Festina lente* is just as important a principle in the after-treatment of an abscess of the liver as is the avoidance of delay in operating when once the abscess has been diagnosed. Quite a variety of causes were at work to prevent the closure of the fistula—(1) There was the absence of surgical rest owing to the cavity and fistula having such close relations to the diaphragm, a muscle which is never at rest; (2) the course of the fistula was somewhat tortuous through the various layers of liver, peritoneum, diaphragm, pleura, intercostal muscles, and skin; (3) there resulted consequently an ill-drained cavity at the end of a long and sinuous passage, which would not heal owing to retained sloughs; (4) the escape of bile and mucus from time to time through the fistula caused irritation and retarded union; and (5) the chronic nature of the case tended to further the formation of a lining of dense cicatricial tissue in the walls of the fistula, which, until it was destroyed, of itself precluded the possibility of closure.

Calcutta.

ILLUSTRATIVE CASES OF APHASIA.

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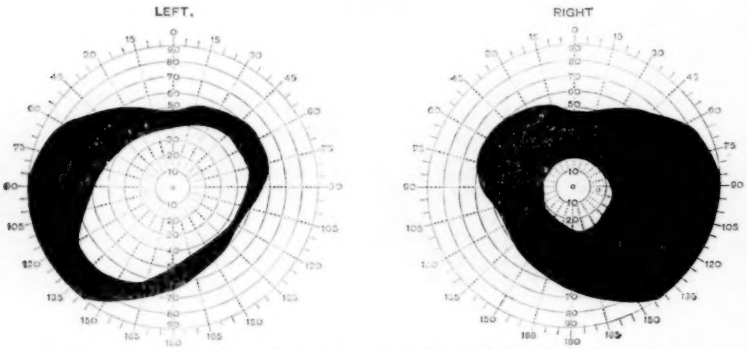
(*Continued from p. 1080.*)

CASE 9. *Complete motor aphasia, word-blindness, and agraphia; no obvious word-deafness.*—This is another case in which the patient could understand spoken language; in other words, in which there was no obvious affection of the auditory speech centre, but in which there were complete motor vocal aphasia, word-blindness, and agraphia. This condition was present from the first. The absence of word-deafness in an otherwise complete aphasia of rapid development suggests either (*a*) that in some persons the auditory speech centre is active on both sides, or (*b*) that a profound vascular lesion which completely destroys the functional activity of the visual speech centre, the motor vocal speech centre, and which produces complete agraphia, does not implicate the auditory speech centre. In commenting upon Case 8 I have already referred to this most interesting and important question. The notes of the present case are as follows. The patient, a man aged sixty-three years, was seen on Aug. 31st, 1893, suffering from slight right-sided hemiplegia and aphasia. On the 27th he had some difficulty in speaking and his wife noticed that he repeated some words two or three times. This passed off in the course of a few hours. The next day the difficulty in speaking returned and again passed off. He remained fairly well until the 30th, when he had a more severe attack. He completely lost his speech, the temperature rose, his head became very hot, and he wandered a little in his mind. Since then he had complained of numbness and weakness in his right hand and leg. On examination the right side of the face was found to be markedly, and the right arm and leg very slightly, paralysed. Mentally the patient appeared pretty acute. He seemed to understand everything that was said to him; he put out his tongue, moved his hand, leg, &c., when told to do so. The auditory speech centre did not appear to be affected, at all events in any marked degree. There was complete motor vocal aphasia. He could not even say "yes" and "no." There was complete word-blindness. Several simple questions were put to him in writing, but he manifested no sign of intelligence. The rough test seemed to show that there was right-sided homonymous lateral hemianopsia; but in the patient's aphasic and word-blind condition it was difficult to be sure of this. He was quite unable to write; although there was little (gross) loss of power in the right arm and hand he seemed unable to hold a pen or pencil securely. A week after my visit he became very much worse, the temperature rose, he seemed to suffer from headache, and the right arm and leg became completely paralysed. The attack was probably due to secondary inflammatory changes around the lesion. He slowly recovered from this condition. On Nov. 8th, 1894, his wife, who was consulting me about herself, reported that he was able to walk and had regained some power in the right hand. He seemed to understand everything that was said to him, but was totally speechless; he could not even say "yes" and "no." He could not understand written language. He could sign his own name, but could not write anything else. She doubted if he always made signs correctly. She thought he sometimes pointed in one direction when he meant another. Nevertheless,

he interested himself in his garden and grounds, and was constantly out of doors in fine weather, giving directions by signs, which were evidently intelligible, for the gardener did what he wished him to do.

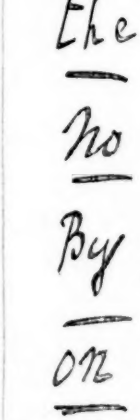
CASE 10. *Left hemiplegia with paralysis of the muscles supplied by the right third nerve; word-blindness; paragraphia.*—This case is of considerable interest from the fact that the marked word-blindness and paragraphia were apparently the result of a lesion of the right hemisphere, though the patient was right-handed. I say apparently the result of a lesion in the right hemisphere, for in the absence of post-mortem verification it is impossible to be absolutely sure on this point. There may, of course, have been a double lesion—one in the right side of the brain causing the paralysis of the right third nerve and the left-sided hemiplegia, and another in the left side of the brain (left angular gyrus) causing the word-blindness and paragraphia. But this is unlikely. An interesting point in the case is the fact that the patient could read printed better than written characters. The notes are as follows. The patient, a man aged thirty-four years, first came under my observation in the out-patient department of the Edinburgh Royal Infirmary on Feb. 10th, 1886. As to his previous history, the patient, who gave me the impression of having been both intelligent and fairly well educated, stated that four years previously he suffered from very severe neuralgic pains in the head and the muscles of his right eye had become paralysed. Three years previously he had an "apoplectic attack" followed by left hemiplegia. Before his illness he could read and write well. He had not been able to speak well since. He very slowly recovered from this attack; the paralysis of the face and arm had entirely disappeared, but the leg was still weak. For the past four months he had been able to follow his former employment and to earn 15*s.* a week. The patient's memory was evidently very much impaired, but the essential accuracy of the above statement as to the previous history is confirmed by Dr. John Thomson, who saw the patient a few days after the onset of the hemiplegic attack, and to whom I am indebted for the following note, which was made at that time. "For the past twelve months the patient has suffered from neuralgia of the head. This was followed by paralysis of the right third nerve. The right eye was shut for sixteen weeks, the patient saw double; the rest of his face was not affected, and no other parts of the body were paralysed. The right eyelid has always drooped since the attack. Since the paralysis the patient has suffered from recurrent attacks of neuralgia in the head. On the morning of Jan. 26th, 1883, he choked while sitting at breakfast: he then 'took a shiver' and was put to bed; there was some difficulty in getting his coat off his left arm. During the afternoon the left side gradually became more paralysed; he spoke a little when roused, but he has never spoken clearly since. He lay for two days in a stupid condition, and seemed to have pain in the throat; he was very cross and irritable, and would not swallow. Three days after the attack he was able to speak quite intelligently and was not so irritable; had a dose of castor-oil; has refused to take everything since; he attempted to get up and go out; had to be held down in bed." His condition on Feb. 10th, 1886, three years after the original seizure, was as follows. The patient, who was right-handed, was well nourished. The gait was markedly paralytic, with much circumduction of the left leg. The left arm was slightly weaker than the right and the left side of the face seemed somewhat flatter than the right. There was some ptosis of the right eyelid; the patient could neither rotate the eyeball upwards nor downwards; the eyeball was not rotated inwards during efforts of fixation for near objects, but it was moved inwards—i.e., to the left—in association with the opposite eye—i.e., when both eyeballs were turned to the left. The patient said that he saw double on looking up. The right pupil was dilated and twice the size of the left; its outline was slightly irregular; it contracted, but not briskly, both to light and accommodation. Both the acuity of vision and the field of vision were considerably impaired in the right eye, much less so in the left (see Fig. 18). On ophthalmoscopic examination the retina surrounding the margins of the right disc was perhaps a little hazy, the disc a little paler, and the veins a little larger and more dilated than those in the left. The other special senses appeared to be normal. Both the deep and superficial reflexes were greatly exaggerated (knee-clonus and ankle-clonus) in the left paralysed leg, and considerably exaggerated in the right. Urination and defecation were normal. The sensibility of the skin to tactile and painful impressions seemed normal and equal on both sides of the body. The heart and kidneys appeared to be healthy. As to his psychical functions, memory seemed much impaired and the cerebration generally slow, but the patient seemed to understand everything that was said to him and did what he was told. His emotional faculties were under loose control; he laughed much too easily. He seemed inordinately amused at many of the tests which were applied in eliciting the foregoing particulars. With regard to his speech faculties, there was no motor aphasia. The articulation was somewhat slow, thick, and hesitating. There was no obvious word-deafness. There was considerable word-blindness. The patient seemed to be able to read printed (type) characters much better than manuscript. The printed words "the," "on," "of," "by," "hotel," "same," "each," and "Switzerland" were read correctly. The word "the," written as in Fig. 19, he said was three figures. When asked after a considerable interval to read the same word he said, "It is two strokes and a nothing." The word "on," written as in Fig. 19, he read correctly. The word "no" (see Fig. 19) he read as "nothing"; and as to the word "by" (see Fig. 19) he said after some hesitation, "It is b y; no, it is b e; no, by." When tested on another occasion he was unable to read the written words "the" and "of," while "by" he said was "baby." While being tested on this occasion he was obviously quite conscious of his defects, for he said, "I am like a daft man; before I spell that out now I forget what I began with." On another occasion he correctly read his own name, "Edinburgh," and "How do you feel?" but could not read the words "dog" and "cat" when written by me. There was marked paragraphia. His manipulative powers were unimpaired, but he

FIG. 18.



Perimeter chart of the fields of vision in Case 10, showing marked constriction of the right and some constriction of the left field, perhaps the result of former papillitis.

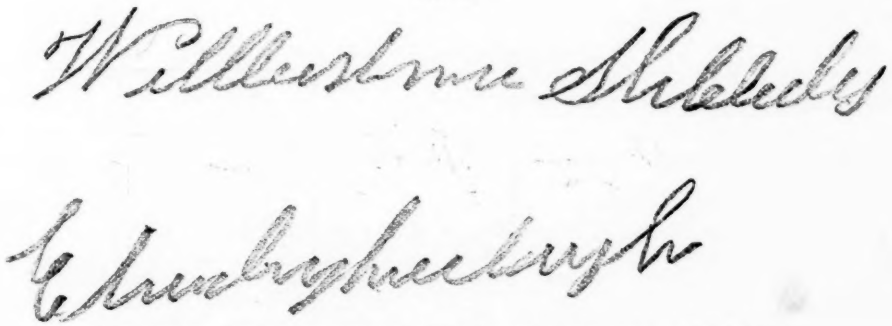
FIG. 19.



Facsimile of written words, some of which the patient was unable to read on June 2nd, 1887.

always introduced too many letters into his words. Even his own name and the word "Edinburgh," which must have become by frequent repetition, when he was well, thoroughly "well organised," were hopelessly mis-spelt. A facsimile representation of his signature, and of the word "Edinburgh" as he wrote it, are given in Fig. 20. He also made mistakes in writing individual letters. The letters "a," "o," "c," "g," "t," "p," and "e" were written correctly, but he wrote "w" for "v," and "v" for "b." On the same occasion he wrote "good" for "God," "goog" for "dog," "tct" for "cat," "alon" for "no," "htee" for "the," and "ndam" for "and" He also made mistakes in reading and writing figures and numbers. He was able to read and write single numbers (from 1 to 9) correctly; beyond this he was invariably wrong; the mistakes were in many cases repeated, although they were not in all cases identically the same. On different occasions he wrote the number 10 as follows: 100, 101. 1001, 10001, and 10101. On May 8th 11, 12, 13, 14, 15, 16, and 17 were written 111, 121, 131, 141, 151, 161, and 171. On June 2nd 14 was written 1141 and 15 was written 501. The number 100 was written on different occasions as 1001, 10001, and 100001. The number 20 was written on different occasions as 120, 210, 200; the latter mistake was made on two separate days. On one occasion 30 was written 300 and 310, 50 was written 1601, 60 was written 115, 70 was written 071, and 80 was written 8100. On June 2nd the number 10 was read as 100; 101 as 10; 1001, which he had previously written as 10 or 100, was not read, but he said, "Oh, it is millions." 201 was read as 300, and before arriving at this result he said: "That is a two and a one, that is three, that is three hundred." 20 was read as 200, 210 was read as 400, 150 was read as 155, 21 was read as 12, and 13 as 31. On June 8th 10 was read as 100, 1000 as 110, 101 as 111, and 1001 as 111. On the same occasion all the single numbers were read correctly. He was then asked to read 15, and said: "Oh, but you are coming it too heavy on me now." When pressed to try to read it he said: "That is one and five, that is six." In all these mistakes there is, it will be observed, the tendency to put in too many figures and to end up with the figure 1. Some of the mistakes, such as 210 being read 400, it seems impossible to account for.

FIG. 20.



Facsimile of the patient's signature and of the word "Edinburgh" as he wrote it on June 2nd, 1887.

(To be continued.)

A CASE OF PERSISTENT PRIAPISM.

BY ARTHUR H. WARD, F.R.C.S. ENG.,
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A MAN, aged thirty-two years, unmarried, applied for relief at the London Lock Hospital on April 20th, 1896. He had suffered from continuous erection of the penis with much pain for five days, and had had no sleep. On admission his family history was negative. He had had no illness or serious accident, had always been temperate, and had never lived abroad or suffered from ague. There was no history of any venereal disease. He stated that he always bruised very easily. Eight days before admission he had had intercourse, but had noticed nothing unusual afterwards. Five days before admission he got up at midnight to pass urine, having been asleep for some hours. On returning to bed erection of the penis occurred. This condition remained through the night unchanged, with much pain referred to the body of the organ. He went to work the next day, but afterwards remained in bed on his back with the knees drawn up. Any attempt to turn on his side was followed by greatly increased pain. There were no emissions or sexual desires. The patient was a small, weedy individual, with a weary aspect. The penis was hyper-erected, being almost in contact with the median line of the abdomen. The erection was confined to the corpora cavernosa, the rounded ends of which could be clearly felt through the substance of the glans, which, together with the corpus spongiosum, was perfectly flaccid. The corpora cavernosa were of almost wooden hardness, and fluctuation could not be felt. Any attempt to depress the organ caused acute pain; the skin was normal, and there was no localised swelling. The pulse and temperature were normal, the tongue was clean, and the urine was acid, with no albumin. The heart and lungs were healthy. The left side of the abdomen was somewhat rigid, and felt uniformly hard. The spleen was considerably enlarged, and its anterior margin could be felt near the umbilicus; no bruit or friction fremitus were present. The liver was apparently normal. There were large, soft, smooth glands in the groins, axillæ, and sides of the neck; they were moveable, painless, and discrete; the skin over them was natural. There were no signs of local hæmorrhage. The patient was not markedly anæmic, and complained of no symptoms of that condition. There was much pain and straining on micturition, so a soft catheter was passed periodically. The penis was treated with lead and opium lotion and supported by masses of cotton wool and a light bandage round the body. The bowels were opened with salines and citrate of potash and hyoscyamus given. He slept badly and required hypnotics. On the third day there was little change. An inflammatory swelling was found over the right corpus cavernosum near the crus, this subsided spontaneously. Iodide of potassium was given in ten-grain doses three times a day. The penis became very gradually less painful and rigid, and about the seventh day fluctuation could be felt over the corpora cavernosa. The spleen increased in size and the notch could be felt at the umbilicus, while the lower border extended down to the crest of the ilium. On the tenth day the Clinical Research Association reported on the blood as follows:—"Hæmoglobin and red corpuscles 50 per cent. of normal. Proportion of white corpuscles to red 1:8." Increasing doses of arsenic were given together with iodide of potassium. On the eighteenth day the patient could pass water without the catheter. The spleen was still increasing. The Clinical Research Association again reported as follows:—"In the specimen of blood examined the leucocytes are in greatly increased number in an average field—1:2. They are mostly of the large and not very sharply staining variety, but the eosinophile and granule cells are also increased. The lymphocytes do not seem to be increased. Poikilocytosis is not marked, but nucleated red blood-corpuscles are occasionally met with. A few cells of

doubtful nature, containing large splotches of material staining purple with methylene blue and eosine, are met with; these possibly are fragments of broken-down red blood-corpuscles. The blood is typically leucocythæmic and would point to the splenic variety of the disease." By the end of the fourth week the priapism was much less, and the penis fell forwards when the man stood up. He felt better in all respects and slept well without drugs. His condition continued to improve, and by the end of the eighth week the penis was almost normal. One or two indurated masses remained in the crura. On the morning before leaving the hospital the patient had a normal erection without pain which soon subsided. He was transferred to St. Mary's Hospital for further medical treatment. Two months later Dr. John F. H. Broadbent kindly reported that there had been no return of the priapism, that the spleen was very much smaller, and the condition of the blood improved. The patient had gained weight and seemed to be fairly well. The arsenic treatment had been pursued.

Remarks.—This rare case I consider to be one of spontaneous thrombosis of the corpora cavernosa consequent on the blood condition and established by an ordinary erection. The extraordinary hardness of the parts at first could only have been produced by the distension of the cavernous tissue with a passive clot. This large mass would naturally disintegrate in a few days and then afford a sense of fluctuation, but the thrombosis of the emissary veins persisting would prevent any escape into the circulation and at the same time keep up the condition of erection. I regarded the inflammatory swelling on the right side as probably surrounding a blocked emissary vein. The indurated masses which were felt in the crura at the end of the case were probably portions of the thrombus, which had organised more or less completely. The iodide treatment was adopted with a view of promoting the absorption of the clots, and this process was probably assisted by the local pressure, which at the same time gave the patient considerable ease by preventing the extreme tension which any displacement of the penis caused. I determined to avoid making any incisions if possible, although no doubt the disintegrated clots might have been squeezed out through them. But sepsis in this situation was only too likely to occur, and in the patient's general condition might have been disastrous. I doubt if anything short of actual suppuration justifies incisions in such a case, since even if sepsis be avoided adhesions between the trabeculæ must occur at the seat of the incisions and might cause distortion, while a septic condition would probably result in the entire loss of erectile power. I cannot help concluding that all these cases of persistent and rigid priapism must be referred to a local thrombosis due either to abnormal coagulability of the blood or to injury with laceration of the cavernous tissue or emissary veins, in which case thrombosis would occur as in the distal ligature of an aneurysm. The fact that the corpus spongiosum is generally unaffected indicates most strongly that neither reflex nor cerebral nervous irritation can be the cause of this condition; besides, it is nearly inconceivable that priapism could be kept up for weeks or months without exhaustion of the nerve centres if it depended on their

TWELVE CASES OF PERSISTENT PRIAPISM.

Case.	Where published.	Age.	Cause.	Duration.	Result.	Treatment.	Complications, &c.
1	Mr. Calloway: Medical Repository, 1824.	—	Intercourse.	3–4 weeks.	Impotence.	Venesection; leeching; hot bath; tobacco enema; tartar emetic; nitre; mercury ointment; and incisions.	Suppuration.
2	Mr. J. W. Tripe: THE LANCET, July 5th, 1845, p. 8.	26	Intercourse.	3 months.	Subsided spontaneously some months after leaving off treatment.	Cold lotions; calomel; antimony; opium; leeches; and venesection.	—
3	Mr. Lloyd: Medical Times and Gazette, vol ii., 1852, p. 185.	23	Third attack; no cause.	7 weeks.	Cured; penis stated to have later performed its functions satisfactorily.	Leeches; camphor; opium; tartar emetic; blisters; chloroform; and venesection.	Hæmoptysis, severe; 1 plat.
4	Mr. R. W. Dunn: THE LANCET, Aug. 8th, 1863, p. 162.	48	—	5 weeks.	Returned to work cured.	Iodide of potassium; leeches; and compound soap pill.	—
5	Mr. Birkett: THE LANCET, Feb. 16th, 1869, p. 207.	44	Intercourse.	4 months.	—	Incisions.	Suppuration.
6	Mr. Hird: THE LANCET, Jan. 18th, 1873, p. 90.	55	Second attack.	19 days.	—	Purgatives; fomentations; calomel; belladonna; camphor; bromides; chloral; chloroform; and iodide of potassium.	—
7	Mr. Johnson Smith: THE LANCET, June 7th, 1873, p. 804.	46	Accident.	1 month.	—	Bromide of potassium; belladonna extract; and mercury ointment.	—
8	Dr. Salzes of Worms: The Practitioner, vol. i., 1880, p. 296.	46	—	7 weeks.	Impotence; died one year later.	Camphorated poultices; leeches; chloral; chloroform; camphor; and opium.	Large spleen from previous intermittent fever, thirty-one years ago.
9	Dr. Mackenzie Booth: THE LANCET, May 14th, 1887, p. 973.	55	—	7 weeks.	—	Purgatives; bromides; laudanum enema; ice; oleate of morphia; suppositories; blisters; leeches; and iodide of potassium.	—
10	Mr. Hulke: THE LANCET, Feb. 18th, 1888, p. 321.	34	Intercourse.	4 weeks.	Impotence.	Sulphate of magnesia; antimony; bromides; belladonna extract; and mercury ointment, with ice to the penis.	—
11	Mr. W. H. Crago: Australian Medical Gazette, 1888.	54	Gout.	5 weeks.	—	Colchicum; tartrate of soda; lead and opium lotion; mercury and belladonna ointment; quinine; bromides; Dover's powder; belladonna suppositories; and urethane.	—
12	Dr. Vorster: THE LANCET, Dec. 8th, 1888, p. 1144.	—	Straining at stool.	36 days.	—	Incision.	Hæmophilia and splenic leukæmia.

action. An essentially mechanical cause has to be sought for locally, and thrombosis, due either to coagulation or laceration, seems to account for the matter satisfactorily.

I have to thank Mr. A. Shillitoe, registrar to the London Lock Hospital, for the careful notes of the above case. He has also looked up and arranged the twelve cases given in the accompanying table; these are interesting especially from the point of view of treatment. These cases, with that already described, give thirteen examples of prolonged priapism, not the result of any cerebro-spinal lesion. Three were complicated with splenic trouble. In only four is the condition stated to have followed on intercourse. In three the final result was impotence. In Case 3 the organ is said to have afterwards performed its double functions satisfactorily. In the other cases the impairment or otherwise of function is not remarked upon. In the *New York Medical Journal* for 1888 Mr. George Peabody said he had collected thirty-two cases of prolonged priapism, six of which were complicated with enlarged spleen and its results. Among the six are a case under the care of Dr. Klemme (Schmidt's "Jahrbücher," 1866); one under the care of Dr. Louquet (*Allgemeine Medicinische Central-Zeitung*, 1876); and one under the care of Dr. Matthias (*Berliner Klinische Wochenschrift*, 1879).

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ACCIDENTS ATTENDING VACCINATION.

BY P. MURRAY BRAIDWOOD, M.D. EDIN.,
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FROM a copy of the "Inquiry into the Causes and Effects of the Variolæ Vaccinæ" (third edition, 1801, p. 5) I learn from the discoverer of vaccination that when milkmen and milkmaids get infected by vaccinia their systems become affected, "the pulse is quickened; shiverings, succeeded by heat, general lassitude, and pains about the loins and limbs, with vomiting, come on. The head is painful, and the patient is now and then even affected with delirium." This graphic description would apply to an attack by any of the causes which induce constitutional disturbance. It is therefore of no wonder that vaccinia, even in the mild form of arm-to-arm vaccination, is occasionally attended and followed by accidents. Jenner always maintained febrile reaction to be "the only perfect proof of constitutional affection and absolutely essential to the perfection of the prophylaxis." Without it he considered a vaccination to have been "merely local and quite or nearly without value." Again, in animal vaccination, where the vaccine has been continuously transmitted through heifers without having ever been in contact with human blood, the vaccinia pursues a definite course, papulation appears at the end of the third or beginning of the fourth day, areolation commences at the latter end of the ninth or beginning of the tenth day, the formation of crust or scab being accomplished on the sixteenth or seventeenth day, and falling off spontaneously about the twenty-fifth day. In children vaccinated with humanised lymph the stages of vaccinia are of much shorter duration. The crust resulting from animal vaccinia approaches very nearly the size of the vesicle, is of a rich brown or dark mahogany colour, and when employed for vaccinating children shows great reluctance to affect the human system. In animal vaccination there is noticeable very decided febrile reaction coincident with the rise, development, and decline of the areola, and the disease results in an indelible cicatrix or scar of a peculiar and well-defined type. On the other hand, vaccinia induced by humanised lymph runs a rapid course, its vesicles are easily ruptured, the crust is of much smaller size than the vesicles, falls off early, and the cicatrix forms a comparatively imperfect mark. It is well, further, to bear in mind the bovine origin of vaccinia, its relationship to diseases in the lower animals, its epidemic character when spontaneously generated in the bovine economy, but not when introduced there by inoculation; its analogy to, but not fraternity with, human epidemic affections, and its inoculability both into the lower animals and into man.[1]

[1] The Morphology of Vaccine Lymph, by P. M. Braidwood, M.D. Edin., in the British and Foreign Medico-Chirurgical Review, January, 1873.

It is no uncommon occurrence for a child to be exposed to measles, varicella, &c., and at the same time to be vaccinated, so that he is under the influence of two contagia, and the result depends on which of the two contagia takes the lead. "If," says Dr. Seaton, "vaccination has been successfully performed during the incubation of measles, but the vesicles have not reached their mature or areolar stage by the time that the disease manifests itself, it will very frequently, if not usually, be found that they will not go through that stage until such time as the measles have subsided." Jenner gives a very interesting account of two sisters in whom scarlet fever manifested itself on the eighth day after vaccination. In one the vaccine vesicle remained at its maturity, but "there was a total suspension of areola till the scarlatina had retired from the constitution"; as soon as this occurred the areola advanced in the usual way. In the sister the symptoms indicative of scarlet fever came on severely for about twelve hours; then a rash showed itself upon the face and part of the neck, but in two or three hours suddenly disappeared, and the patient was free from every complaint; it was then observed that the vesicle had the usual areola, and this continued till the fourth day, when it subsided, and scarlet fever again appeared and went through its course with the common symptoms. Vaccination has been repeatedly seen running its course along with scarlet fever, or measles, or chickenpox. In the case of concurrent variola and vaccinia, if both diseases obtained equal mastery of the system, each pursued its own course as far as the local phenomena were concerned, though even then the constitutional effects of the small-pox were often somewhat modified. If, however, the small-pox had got a distinct mastery of the system before the cow-pox it was unaffected by the latter; and the cow-pox did not exhibit its full local phenomena when the system was under the influence of the small-pox contagion. If, however, vaccinia precedes variola it modifies the latter, or altogether prevents its development. Comparative pathology often exemplifies this. Vaccine lymph produces vaccinia, and no disease but vaccinia. These remarks, preliminary to the subject matter proper of this paper, seem to me to be called for by the hazy knowledge of vaccination I have met with among young practitioners and from the manner of teaching it I have experienced.

As regards, now, some accidents which may attend this great earthly blessing (vaccination). In the first place, the vaccination may not "take"; that means that the infective matter (vaccine) applied to the scratched surface of the skin does not affect the system and does not produce the desired vesicles. This accident may be due to the lymph being rubbed off before it has been absorbed, and can be avoided with a little care. The lymph should be thoroughly dried on the surface of the skin before the vaccinated spots are covered. Or the vaccine may not be "active" owing to its being not quite fresh, and having been stored too long. It should be used as soon as possible after removal from the vaccinifer. Secondly, in the case of vaccination of adults it may not succeed because they had been successfully vaccinated in infancy, and again about the age of fifteen or later. Thirdly, it seems hard occasionally to account for vaccination not succeeding till, a few days later, the child or the adult develops some other form of fever. For example, after a child has been carefully and properly vaccinated the vesicles do not appear, but he shows the morbillar or scarlatinal rash, or develops pneumonia. Either of these diseases had first taken hold of his system and prevented the vaccine lymph from having its effect. It is most important to learn from those who bring children to be vaccinated that they are perfectly healthy and well, and have not recently been exposed to infection. Adults, too, should bear in mind that they ought to be quite well before being vaccinated.

I have already mentioned that vaccinia affects the body as other constitutional diseases do; hence it is needful to avoid colds or other accidents which may interfere with its running the natural course. Sometimes as the vaccinia abates the affected arm becomes very red, swollen, and painful, even down to the elbow, while there is sympathetic axillary lymphangitis. At its commencement this distressing condition can be relieved by painting the surface of the arm once or twice lightly with spirit of terebinth, avoiding, of course, the seat of vaccination. A saline aperient is also useful when the constitutional symptoms are severe. The amount and extent of the inflammation attending vaccination varies according to the constitution and to the state of health of the person or child. From the third or fourth day

after vaccination, when the vesicles begin to form, the vaccinated spots should be protected from abrasion by stitching some cotton-wool on the inside of the sleeve. Vaccination shields are in my experience very hurtful. As vaccinia finishes its course troubles often arise through the vaccinated spots not healing rapidly. Various circumstances account for this, the most important being that the crust is rubbed off during sleep. If, then, the vaccinated spots are not protected, not only are they liable to receive surrounding impurities, but may lead to auto-inoculation. In the out-patient department of hospitals such cases are frequently met with, and the infant's mother wrongly ascribes it to the vaccine. Such impetiginous eruptions are really due to ill-health and uncleanliness and may appear on any part of the body. A form of eczema often attacks infants' heads and likewise is ascribed to vaccinia without reason. After the vaccine has dried on the scarified spots the infant can have his usual bath, but on no account should moist applications be used over the vaccinated spots. It should be remembered, too, that the irritation of teething often accompanies vaccinia.

The principal causes of bad and unprotective vaccination are, however, ascribable to the operator—the use of lymph taken at too late a period in the course of the disease, vaccinating with lymph removed from vesicles themselves badly developed or imperfect in character, the employment of lymph too long preserved, the use of a rusty or dirty lancet, and the manner of operating so that no blood is drawn and the lymph does not reach the cutis vera. It should be borne in mind that lymph from an exhausted vesicle is imperfect in power. It is improper, too, to vaccinate with lymph removed from a vesicle after the areola has been fairly formed, and it is decidedly injurious to vaccinate with lymph which is undergoing suppurative deterioration. An occasional accident attending vaccination is erysipelas.

In order to vaccinate always successfully great attention should be paid to details, and it requires a very decided degree of technical skill, patience, and experience. This is the more important when heifer vaccine is coming into general use. Its action is stronger than that of humanised vaccine.

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NOTES ON THE TREATMENT OF SEA-SICKNESS.

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IN my winter lectures it has been my practice to speak of the climatic treatment of disease, and notably of the magic effect produced by sea voyages. I had also to point out that in many cases the patient's liability to sea-sickness prevented the full use of this the best of nature's tonics, and in order to show my students how this disadvantage may be removed I have drawn their attention to the preparation called chlorobrom, which, as I know from personal experience, in many cases cures, and in all cases alleviates, sea-sickness. From time to time reports on its efficacy are sent to me by old students who have had experience at sea, and I have now some fresh cases to communicate.

Six ship surgeons previously prone to sea-sickness, who during the last six months have, by following my directions, sailed to Calcutta and back without suffering the least inconvenience, report as follows.

Examples of prophylactic treatment.—(*a*) Dr. Dunlop writes on Jan. 13th, 1897:—"I am an indifferent sailor, and the prospect of a voyage to India in the capacity of a surgeon was marred by the thought that I would suffer from *mal de mer*. By following the directions given me as to a cholagogue, dietary, and dosage of chlorobrom, I suffered no ill effects from the voyage." (*b*) Dr. McLure, on Jan. 23rd, 1897, reported as follows:—"Ordinarily a poor sailor, by acting on your directions I was enabled to reach Calcutta without the slightest feeling of nausea, and although on the homeward voyage we had a very rough passage across the Bay of Biscay, I was equally free from any feeling akin to nausea or sickness." (*c*) Dr. McNaught, on Sept. 25th, 1896, wrote *inter alia*: "In my own case I had an opportunity of trying chlorobrom as a prophylactic remedy, and I feel sure it was the means on several occasions of warding off unpleasant attacks of sea-sickness." The others testify in a similar manner. (*d*) Dr. Allan gives the following account of a case of prophylactic treatment: "A lady who had always suffered from sickness when the surface of the waters was troubled, was treated as follows. Before sailing she took, according to my advice, a smart calomel purge; on retiring to her cabin in the evening she had one drachm of chlorobrom: next morning a light breakfast and then another drachm of chlorobrom. At noon—the steamer beginning to roll—she had three drachms, and I asked her to lie down for an hour or two; she did this. She at no time felt sick, and in the course of the afternoon she expressed her astonishment and gratitude at such unaccustomed immunity."

Examples of curative treatment. CASE 1.—A man was very sick one hour after putting to sea. He had just partaken of breakfast. After the stomach was cleared he had a glass of soda water. Five minutes afterwards he took twenty-five minims of spiritus chloroformi. The stomach being now soothed, he had two drachms of chlorobrom and one drachm every half hour for three doses. About noon he fell asleep and awoke at 4 P.M. He had one drachm of chlorobrom and also three grains of calomel. He felt thoroughly well, and at 6.30 P.M. he sat down to dinner and enjoyed a hearty meal. The same course was pursued later when he sickened in the monsoon, and a similar happy result was obtained.

CASE 2.—A man, who had been previously free from any symptom of sickness, complained of depression and what I called mental pain and nausea. After taking a dose of calomel he lay down, and half-an-hour afterwards he was given half an ounce of chlorobrom. Towards night he felt better. At 8 P.M. and at 9 P.M. he took one drachm, and at 10 P.M. two drachms of chlorobrom. Next morning he was up early and, as he expressed it, "as lively as a cricket." For the next three nights he had one drachm of chlorobrom. At no time had he any return of the symptoms.

These cases are almost picked at random and are illustrations of the efficacy of chlorobrom. I have no hesitation in saying that, if administered in a sensible and thorough manner, chlorobrom will effectively meet each and every symptom of the dreaded sickness. And I am glad to give my testimony of the success of a treatment which I learned within the walls of my University.

Glasgow.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF FOREIGN BODY IN A BRONCHUS.

BY T. LAUNCELOT ARCHER, M.R.C.S. ENG.

IN November, 1895, I was sent for to see a boy, aged nine years, who had been ailing for a few days, gradually getting worse. The temperature was 103° F., there was a rapid, full pulse, the expression was anxious, and he had a short spasmodic cough without expectoration. The lower lobe of the left lung was congested, but all the remainder of the lungs was clear. I saw the child daily for more than a week, during which time his temperature varied but little, the congestion did not clear up, and the cough was, if anything, worse, added to which there were violent retching and some diarrhœa. He also complained of great pain about the level of the ensiform cartilage on the left side. Eleven days after my first visit I received an urgent message saying that the child was choking. When I arrived he was pale and exhausted, but quiet. His mother said that he had had a violent fit of coughing, lasting for twenty minutes, followed by some blood-stained expectoration. On examining the sputa I found a piece of a nut of the size of a large bean, surrounded by blood-stained purulent matter and mucus of very offensive smell. The child passed a quiet night, coughing only three or four times, but expectorating purulent matter, and in the morning he was decidedly better; from that time he steadily improved to complete recovery.

On inquiry his mother said that a fortnight before I was first sent for he was eating some nuts when a piece "went the wrong way"; he choked and coughed for a time, but soon recovered himself, and she thought that he had got the offending morsel up, but from that time he had complained of pain in his chest and he had been a little unwell until I was sent for. I suppose that the nut found its way into one of the bronchial tubes which it closed up, causing the lung mischief and setting up some inflammation resulting in a small abscess, and so becoming loose was coughed up, as I have described, a month after the accident. The case is an unusual one, and as such I have thus briefly described it, thinking it may be of interest to other readers of THE LANCET.

Vincent-square, S.W.

A CASE OF POISONING BY OYSTERS.

BY EDWARD BUXTON, M.D., F.R.C.S. EDIN., D.P.H.

ON Nov. 24th, 1896, at 9.30 P.M., I was hastily called to a man whom I found in bed writhing in the most intensely agonising pain in the epigastric region. I immediately gave him a hypodermic injection of half a grain of morphinæ sulphas and one-seventy-fifth of a grain of atropinæ sulphas, and applied flannels wrung out of hot water and sprinkled with laudanum over the region of the pain. Before my arrival he had fortunately vomited freely several times. When in the course of an hour or so the pain slightly moderated, upon inquiry as to the supposed cause of the trouble, I learned from him that he had arranged to dine with a few friends in the city (Liverpool) and to commence with he had three oysters. He was perfectly well when he sat down to dinner, but had not swallowed the oysters more than two minutes before a feeling of discomfort, rapidly merging into more and more acute painfulness, was felt in the stomach. Not wishing to disappoint his friends, he endeavoured to mask his condition, and partook of a little soup. The pain continued to get worse, however, but he still tried to bear it, and waited until the next course was served. The agony he then suffered overpowered him, and he was compelled to leave the hotel, and by means of cabs and railway reached his home, some five miles out of the city, and went to bed, where, as I have mentioned, I found him in great pain with symptoms of collapse rapidly setting in. I remained a considerable time with him and used morphine freely. The pain became somewhat modified by the opium, but lasted all the first night and following day. On the second day the pain had left him, but he was exceedingly weak. I prescribed four-hourly doses of a mixture of three grains of subnitrate of bismuth, ten minims of solution of perchloride of mercury, B.P., and two minims of diluted hydrocyanic acid until the stomach could retain milk and soda water, and subsequently a little dry champagne. On the fifth day he was able to resume his duties, and his recovery was uninterrupted.

The interesting point in this case arises from the exceedingly short period that elapsed between the time of swallowing the oysters and the onset of toxic symptoms.

Waterloo, Liverpool.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL. — The forty-eighth annual meeting of the Wolverhampton and Staffordshire General Hospital was held in the Bell Medical and Surgical Library on March 9th. The report showed that 1859 in-patients were treated during the past year; there were also 12,195 out-patients, who made 42,879 attendances. The average cost of the in-patients was £3 9*s.* 8*d.* per patient and £50 4*s.* 4*d.* per bed occupied; the average stay in the hospital was twenty-three and three-quarter days. The total income for the past year was £8714 and the expenditure was £8461. At the meeting held a year previously attention was called to the necessity for renovating the operating theatre in order to adapt it to modern requirements, and it was now stated that the necessary alterations and re-furnishing were carried out under the superintendence of Mr. T. Vincent Jackson, the senior honorary surgeon, at a cost of £287 11*s.*, and that the theatre was re-opened on July 24th last by Mr. Christopher Heath. In the afternoon a reception was held in the hospital and grounds by Mrs. Thorneycroft and Mrs. Twentyman.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procœmium.

ST. MARY'S HOSPITAL.

PERFORATION OF THE STOMACH BY CHRONIC ULCERATION; PERITONITIS; LAPAROTOMY AND SUTURE OF ULCER; RECOVERY.

(Under the care of Mr. A. QUARRY SILCOCK.)

OF the many morbid conditions at one time considered purely medical which have of late years been handed over to the surgeon, few give more satisfactory results from surgical treatment than perforation of a simple gastric ulcer; but it is essential that only a few hours should intervene between the perforation and the laparotomy, and the satisfactory ending of Mr. Silcock's case, though perforation had occurred twenty-four hours before operation, must be attributed to the careful cleansing of the peritoneum in the neighbourhood of the perforation. The method employed in this case to cover the perforation has been used for the treatment of dilated stomach, as in a case under the care of Dr. Ewart and Mr. Bennett.[1]

A woman, aged twenty-five years, was brought to St. Mary's Hospital by Mr. E. Archer Wood, of Dulwich, on July 11th, 1896, suffering from perforating gastric ulcer and peritonitis. Her history was as follows. She had been in delicate health since the age of sixteen years. On Sept. 5th, 1895, she suffered from hæmorrhage from the stomach and much vomiting. Since that date she had been under treatment for gastric ulcer from time to time, having once been an in-patient at Charing Cross Hospital. On the evening of July 10th, 1896, at 11 o'clock, whilst out for a walk, she was suddenly seized with pain in the left hypochondriac region, vomiting, and collapse. She was seen and attended immediately by Mr. Archer Wood, who diagnosed perforation of a gastric ulcer and prescribed such treatment as was possible under the circumstances; he prohibited any food or fluid by the stomach, and accompanied her on her journey to St. Mary's Hospital the next day. When seen by Mr. Silcock on the evening of the 11th, nearly twenty-four hours after the accident, she was evidently extremely ill and very pallid. The pulse was 100 per minute, regular, and fairly strong. Her temperature was 100°F. The tongue was somewhat dry. The respiration was entirely thoracic, 20 per minute; the diaphragm did not descend in inspiration; the abdomen was considerably distended, the distension being evenly distributed. She complained of pain and tenderness all over the abdomen, but especially in the left hypochondriac region. On percussion the abdomen was found to be generally tympanitic. The liver dulness was lost. The urine was normal. She was at once taken to the operating theatre. An incision about four inches long was made, commencing one inch to the outside of the ensiform cartilage and carried outwards on the left side parallel to, and about half an inch below, the lower border of the ribs. On the peritoneum being opened a large amount of gas escaped. The wound was found to be immediately over the perforation of a large gastric ulcer, through which white curds of milk mixed with gastric juice were escaping. The perforation was in the anterior wall of the stomach about two inches to the left of the middle line. A stomach tube was passed down the œsophagus, about ten ounces of fluid containing a good deal of white curd were syphoned off, and the stomach was thoroughly washed out. Around the perforation the stomach wall was indurated and covered with lymph. The zone of induration extended through all the coats and for an area roughly three-quarters of an inch in width beyond the margin of the perforation, which was about the size of a No. 9 catheter. The silk sutures, inserted

[1] THE LANCET, July 4th, 1896, p. 8.

after the method of Lembert with a view to closing the perforation, tore out by reason of the want of flexibility and friability of the infiltrated tissues, only one holding. The stomach wall was therefore widely reduplicated, the folds being vertical and made outside the zone of leathery induration, so that the perforation was overlapped by them; their peritoneal surfaces were brought into contact and fixed by silk sutures. The peritoneum in the immediate neighbourhood of the incision was then thoroughly cleansed by sponges and irrigation so far as was possible. The parietal wound was closed by sutures, except for a short distance over the site of the ulcer; the sutures passed thorough the entire abdominal wall, including the peritoneum and the integument. A gauze tampon was left in the open part of the wound for drainage. Dressings of cyanide gauze and wool were used. She was treated by nutrient enemata until July 22nd, when small quantities of liquid food were given by the mouth at frequent intervals. The recovery was uninterrupted, except that the wound suppurated, some fever being thus engendered in the earlier days after the operation, and she was discharged from the hospital on Aug. 29th.

Remarks by Mr. SILCOCK.—Two points in connexion with this case are worthy of note. In the first place, a considerable extravasation of the contents of the stomach into the peritoneal cavity had occurred during the somewhat lengthened interval between the time of actual perforation—as indicated by the sudden supervention of pain and collapse—and that of the operation; in that interval, quite contrary to the emphatic and reiterated orders of Mr. Wood, it was evident that the sympathising friends had induced or allowed the patient to ingest a quantity of milk. Indeed, so considerable was the amount of the contents of the stomach found in the neighbourhood of the perforation, and so marked was the peritonitis, that the chances of recovery seemed at the time of the operation to be but slight. Another point is the success which followed the manœuvre of making wide folds of the stomach wall so as to cover the perforation. It will be remembered that a somewhat similar proceeding has been recommended and adopted in America in cases of dilatation of the stomach with a view of lessening its cavity. One feared lest by some sudden strain, as by vomiting or coughing, the frail hold which the sutures had on the wide duplicatures might give way, and in any case the strain upon them must have been considerable, but fortunately there was no sickness after the operation. The use of the gauze tampons, now a favourite device with surgeons in similar cases, no doubt played its part in securing adequate drainage. The patient was last seen at the end of November, and had married. She would not be dissuaded from taking this step, although warned that the consequences might be serious; she was carefully carrying out the directions of Mr. Wood as to diet, and did not suffer from any pain after food; in fact, she was practically well.

Medical Societies.

HUNTERIAN SOCIETY.

Exhibition of Cases.

A CLINICAL meeting of this society was held at the London Institution on April 14th, Dr. G. E. HERMAN, President, being in the chair.

Dr. BUTLER HARRIS gave a demonstration of the Treatment of Chronic Ulcers by Ozone.—Dr. F. J. SMITH remarked on the probable usefulness of ozone in chest disease.—Dr. HARRIS pointed out that it would be too irritating.

Dr. J. H. SEQUEIRA showed a case of Infantile Hemiplegia in a girl, aged three and a half years, which followed after a fit; the paralysis involved the left side. He referred to two other cases; in all three recovery had taken place except in the arm affected. A distinction was drawn between cases of a congenital nature and those following a febrile attack.

Dr. F. J. SMITH showed a case of Spastic Paraplegia in a child aged five years. She had always been healthy except for the condition of the legs, in which there were increase of knee-jerks and ankle-clonus.—Remarks were made by Mr. A. H TUBBY and Dr. ST. CLAIR SHADWELL.

Dr. J. F. WOODS showed two cases of Trigeminal Neuralgia successfully treated after three or four sittings by Hypnotism and Suggestion. Both these cases had been operated on previously by Mr. Charters Symonds, who had removed Meckel's ganglion in one case and had divided the infra-dental nerve in the second, and had attempted on another occasion to reach the third division of the foramen ovale without success. Both cases only temporarily improved and eventually relapsed into their former condition after surgical treatment.—Remarks were made by the PRESIDENT and Dr. GLOVER LYON.

Mr. HOPE GRANT showed a man who had suffered from Numbness in the Thumb, Forefinger, and Middle Finger of the Left Hand, with inability to flex them; sensation was diminished; he had had rheumatic pains for two years somewhat like "lightning pains." There were no loss of knee-jerks and no ankle-clonus; the pupils were insensitive to light, and there was no reaction to accommodation. The patient reeled when standing with his eyes shut. He had had a chancre in his youth and had been a hard drinker.—Remarks were made by Dr. GLOVER LYON, Mr. A. H. TUBBY, and Dr. F. J. SMITH.

Dr. GLOVER LYON showed a case of Fibrosis of the Left Lung with Paralysis of the Left Vocal Cord and with the left pupil smaller than the right.

MANCHESTER MEDICAL SOCIETY.

Peripheral Neuritis in Pregnancy and the Puerperium.—Notification of Phthisis.—Unusual Condition of the Spleen.

A MEETING of this society was held on April 7th, Dr. GRAHAM STEELL being in the chair.

Dr. ERNEST S. REYNOLDS gave a short communication on the forms of Peripheral Neuritis occurring in Pregnancy and the Puerperium. He separated those cases obviously due to injury or inflammation of the nerve roots in the pelvis from those of multiple neuritis affecting the arms or legs, or both, in which some poison was probably the cause. He pointed out how often in the latter cases there had been persistent vomiting of pregnancy, and related a case in which this had occurred.

Dr. JAMES NIVEN read a paper on the Notification of Phthisis,[1] in which he pointed out that with regard to the modes of transmission of tuberculosis and the means by which such transmission can be intercepted our knowledge is more complete than in the case of any other infectious disease. Notification of phthisis to be of much value must be compulsory. Difficulties will arise in connexion with the expense of notification; but the expense is not prohibitive. The class of cases which require notification comprises tuberculous phthisis, tuberculous diarrhœa, tuberculous glands and ulcers whatever may be the cause of the ulceration—in fact, all cases with well-marked discharge. In order to enable us to exercise some control over our public milk-supplies we also require notification of cases of tabes mesenterica. In connexion with the practical routine of notification it will be necessary (1) to make a careful record ledgered for names, addresses, and places of occupation of the cases reported—such a record will be of immense importance in tracing the pathways of infection; (2) to ascertain and remove the conditions which have proved active in producing the disease in the cases notified; (3) to see that strict personal hygiene is carried out for each case reported both in his own interest and that of others—this the medical attendant would be expected to see to, but information would be obtained by the delegates of the health office as to the steps actually taken; (4) to carry out disinfection and other arrangements for cleansing and for the maintenance of cleanliness in the surroundings of the tuberculous person, to disinfect rooms vacated by phthisical patients in hotels, lodging-houses, &c.; (5) to enable the medical staff of the health department to collect information and make investigations as to the conditions of propagation of tuberculosis with a view to prevention; (6) to enable education in preventive measures to be applied at the most useful time and in the most useful way; and (7) to assist the health officer in tracing tuberculous food infections.

Mr. C. E. RICHMOND showed a Spleen enclosed by a layer of very tough fibrous tissue which was two inches thick in

[1] This paper will shortly appear in our columns.—ED. L.

some places. This layer was apparently organised inflammatory deposit; it contained bloodvessels of considerable size and was outside the spleen capsule. The spleen pulp itself almost everywhere showed cirrhotic changes. The patient was a female aged twenty-eight years. There had been pain and gradual enlargement for two years, but there was no history of syphilis or ague. The condition of the blood and the clinical phenomena were not at all those of leucocythæmia. The other viscera generally were healthy.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens.—Injury to the Brachial and Cervical Plexuses of Nerves.—A Case of Tetanus treated by Antitoxin; Recovery.—Lupus of the Vagina.—Twin Labour.—Vaginal Hysterectomy for Cancer.

A MEETING of this society was held on April 6th, the President, Mr. GODFREY CARTER, being in the chair.

Dr. EURICH gave a demonstration of Microscopical Specimens illustrating Locomotor Ataxy affecting the Cervical Region of the Cord, Ataxic Paraplegia, and Psammoma.

Dr. HOWARD GLADSTONE related two cases of old-standing Injury to the Brachial and Cervical Plexuses of Nerves, and described the appearances of the structures of the forearm as seen on dissection of the limb after amputation.

Dr. CHAPMAN related a case of Tetanus treated by Antitoxin and resulting in recovery. The patient was a man, aged twenty-seven years, who sustained a lacerated wound of the forearm. Tetanic symptoms commenced after a lapse of eighteen days; the wound had not suppurated freely, but there were some redness and gaping of its edges. The temperature was 100° F. The spasms were of moderate severity, but the patient was scarcely ever free from some spasm; they continued for eleven days, during which time 360 grains of antitoxin were administered subcutaneously. On the fourth day a macular rash appeared on the sides of the chest wall. One week after admission the patient became delirious and remained so for a fortnight. About the time that the administration of antitoxin was stopped pain and tenderness of several joints were noticed, and these symptoms persisted for some three weeks, although during the greater part of this time there was no febrile disturbance. Dr. Chapman said that the part played by the antitoxin in the successful issue of the case was somewhat doubtful, as from the first the prognosis was favourable, owing to the considerable lapse of time (eighteen days) between the receipt of the injury and the onset of tetanic symptoms.—Dr. CAMPBELL, Dr. HORROCKS, and Dr. SHIACH discussed the case.

Dr. HORROCKS showed a specimen of Lupus of the Vagina and made some comments on ulceration affecting the orifice of that canal. He said that there was a group of symptoms—namely, local smarting and aching pain, much increased by micturition, defecation, and coitus—associated with a condition of injection with superficial ulceration of the mucous membrane of the vulva, together with a whitish discharge. He further affirmed that these symptoms were not relieved by simple local treatment such as vaginal injection and emollient applications, or even by scraping the ulcers and applying caustic, as in the treatment of lupus, but that the only successful treatment was by free and deep excision of the ulcers, which had been followed by cure in a number of cases. Dr. Horrocks called attention to another condition of the parts associated with symptoms suggesting caruncle of the urethra. On examination there is found, instead of the vascular papilloma (caruncle) a mass of exuberant granulations blocking the urethral orifice and having the colour of lupus; these may spread on to the vestibule or along the floor of the urethra to the opening of the bladder, and may cause incontinence of urine. The ulceration spreads very slowly, but is very resistant to all treatment. This condition may be associated with the shallow ulceration of the vulva previously described. Dr. Horrocks pointed out that the confusion of true caruncle with this lupoid condition of the urethral orifice has led to the idea that caruncles may recur after removal.

Mr. HEBBLETHWAITE related a case of Twin Labour in which unusual difficulties occurred.

Dr. RABAGLIATI described three cases of Vaginal Hysterectomy for Cancer by Martin's method. The results were immediately successful, but in two of the cases recurrence of the disease took place after two and eight months respectively.

Dr. ARNOLD EVANS showed specimens of Measly Pork, and demonstrated the cysticercus of the tænia solium under the microscope.

Reviews and Notices of Books.

The Pathology and Surgical Treatment of Tumours. By N. SENN, M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, Professor of Surgery, Chicago Polyclinic, &c. Illustrated by 515 Engravings, including Coloured Plates. Philadelphia: W. B. Saunders. Pp. 709. Price 26.

THE name and work of Professor Senn of Chicago are so well known in England that the appearance of a treatise by his hand on so important a surgical subject as tumours must awaken general interest.

The volume naturally resolves itself into two parts: a portion dealing with the pathology of tumours, and a portion which is concerned with their treatment, though in the work itself the two divisions of the subject are mingled together, as the description of each variety of tumour is followed by an account of the appropriate treatment.

The first question which presents itself in the pathology is naturally, "What is a tumour?" The author, in answer, emphatically lays down the proposition that "a tumour is a localised increase of tissue, the product of tissue-proliferation of embryonic cells of congenital or post-natal origin, produced independently of microbic causes." This is practically Cohnheim's theory, with the not unimportant modification that the embryonic cells may be of post-natal origin, "being derived from pre-existing mature tissue in consequence of injury or disease, and failing to undergo the normal transformation may give rise to tumour formation in the same manner as embryonic cells of fœtal origin." The same idea is re-stated as follows: "We regard the matrix of embryonic cells as the essential cause of tumour-formation, without which all intrinsic and external exciting causes are inadequate to produce a true tumour." Cohnheim's theory of the "embryonic" origin of tumours was at one time very generally accepted, partly because of the extremely simple way in which it explained the existence of various forms of tumours, and partly because no other theory of any value could be advanced; but, except in the teratomata, the support which this theory receives from ascertained facts is very slight, certainly not more than sufficient to justify it being considered a very ingenious hypothesis, capable of explaining in a fairly satisfactory manner the occurrence of some tumours, and therefore it must be decidedly misleading to a student to have the theory, ingenious though it may be, stated as a fully ascertained fact. Dr. Senn further holds that to obtain a tumour of any special variety of tissue it is necessary that the "embryonic matrix" should be composed of embryonic cells identically the same and not merely derived from the same blastodermic layer. Thus we are told that "heterotopic chondroma" must have arisen from "a matrix composed of embryonic cartilage cells." The theory certainly seems to require a rather reckless scattering throughout the body of useless embryonic cells. There is another part of Professor Senn's definition from which we must dissent. In one of the passages already quoted we are told that a tumour is "produced independently of microbic cause." We practically agree with him when he says that "the microbic origin of tumours ..... has not been established by any convincing experimental investigations or clinical observations," though there are not wanting facts that are most easily explicable on this supposition; but Dr. Senn goes on to say: "Should

future research demonstrate a direct causative relationship between certain yet unknown bacteria and the growth of some of the tumours, such tumours would have to be eliminated from this group of pathological products and classified with the granulomata." That is to say, if carcinomata should ever be shown to be due to a micro-organism, then a scirrhus of the breast would no longer be a tumour. This is surely a *reductio ad absurdum*. Dr. Senn does not seem to recognise that, hough it may be convenient to try to obtain a pathological definition of a tumour which will embrace all those "swellings" which are usually classed as tumours, yet the word is generally and most conveniently used in a *clinical* sense. Certainly in the definition no etiological element should be introduced while we are still absolutely ignorant of the exact cause of any tumour whatsoever.

The pathological anatomy of the various growths is well described, and the clinical characters are excellently given. Numberless illustrations accompany the descriptions of the structure of the tumours; many of them are original, and some are admirably reproduced in colours. The classification adopted is simple, depending primarily on the blastodermic origin of the tissue in which the tumour appears.

Though we can speak very favourably of the pathological section of the work, yet, bearing in mind the author's reputation as a surgeon, we turn with the most interest to the clinical portion of the volume. A chapter is devoted to the general principles of the treatment of new growths, and here we find laid down careful rules for the palliative and curative treatment, with a description of the various methods which have been employed at different times. As we have already mentioned, the pathological description of each tumour is followed by its treatment, and in this way descriptions of a large proportion of the operations of surgery are given; for instance, we find an account of hysterectomy in the section evoted to the treatment of carcinoma of the uterus, and of nephrectomy for the same disease in the kidney; the operation of gastrostomy is described in the account of the treatment of malignant stenosis of the œsophagus, and rhinoplasty is given with carcinoma of the nose. Naturally the result is that the volume is large, but its excellence prevents it from being too large. The paper and printing are perfect. We must confess that we think the index might easily have been fuller, for it at present contains no reference to many of the subjects of which the book treats. The volume is inscribed to the memory of Samuel David Gross, and we can give no higher praise than to say it is worthy of such a dedication.

JOURNALS AND REVIEWS.

The Practitioner.—The most interesting paper in the April number of this journal is one by Mr. Watson Cheyne upon the Prophylactic Injection of Anti-streptococcic Serum. Mr. Cheyne has tried this method in three cases of removal of malignant disease about the tongue and the upper part of the pharynx; two of the patients recovered without any of the septic troubles which are so wont to follow such operations, the third died from a cerebral embolus washed into the brain from the lingual artery, and in this case there was a slight amount of sloughing. This method of protection certainly seems to promise well. Dr. Walter Smith reports an interesting case of Fœtid Suppurative Pericarditis. The Hero of Medicine for the month is Sir Charles Bell.

Quarterly Medical Journal for Yorkshire and Adjoining Counties.—The opening article is a clinical lecture on Differential Diagnosis, delivered by Dr. W. R. Gowers; the patient suffered from weakness of the legs with excessive knee-jerks and an affection of speech. Dr. G. Sims Woodhead describes the effect of a temperature of 50° or 60° C. in modifying the pathogenic activity of tubercle bacilli contained in tuberculous milk. He looks forward to the time when a saprophytic tubercle bacillus may be demonstrated which, though non-virulent in itself, may be the means of continuing the life of the tuberculous virus outside the body for very long periods. Mr. H. Lockwood (Sheffield) gives an account of a case of Myositis Ossificans in a boy aged four and a half years.

Edinburgh Medical Journal.—Dr. J. Batty Tuke contributes the first instalment of a paper on Clinical Cases illustrative of the Insanities. The brain of one of the patients, who died on the seventh day from acute mania, yielded cultivations of a bacillus of uncertain classification, which, however, had no pathogenic effect on guinea-pigs or rabbits. Dr. Tuke refers to various observers who have found micro-organisms in the brain or cerebro-spinal fluid of the delirious or insane. Dr. W. P. Herringham (London) describes a case of Paroxysmal Tachycardia, and gives a summary of fifty-three recorded cases. Dr. A. Francis Dixon (Dublin) writes on the Course of the Taste Fibres. He criticises the view held by Dr. W. R. Gowers that the fifth nerve is the nerve of taste, and concludes that taste impulses reach the brain by the seventh and ninth nerves.

Dublin Journal of Medical Science.—Mr. W. I. Wheeler gives a summarised account of sixty-one cases in which he either partially or completely excised the tongue. Several of these patients, operated on for cancerous disease, had no return of it afterwards for periods varying from one to fifteen years. Dr. Montague L. Griffin describes a case of enormous enlargement of the spleen unattended by leukæmia. The patient measured fifty-five inches round the waist. After twenty-one months' treatment with liquor arsenicalis the splenic area of dulness became normal and the patient regained good health.

Treatment.—The first two numbers of this new journal of practical medicine and surgery contain a variety of interesting original articles by writers each of whom is an authority on the subject of which he treats. The first paper in the first number is by Dr. James Taylor and fully describes the Management of Cases of Acute Myelitis. The patient should lie on a water-bed and every precaution should be taken to prevent the formation of bed-sores; constipation may often be diminished by belladonna extract; any form of counter-irritation is inadmissible until there is no further danger of the inflammation extending, but when this stage is reached the Paquelin cautery may be cautiously applied to the back. Dr. G. A. Sutherland writes on the Use of Chloral Hydrate in Some Diseases of Children; in his hands it has proved very useful in epilepsy, progressive chorea, and asthma. The articles in the second number include a good one by Dr. J. W. Silk on the Preparatory Treatment of Patients subjected to Anæsthesia. The editorial notes and comments, reviews of books, and abstracts from current literature supply a large amount of valuable information in a very convenient form. The price of the journal is 6*d*., and it is published on the second and fourth Thursday in each month by the Rebman Publishing Company, 11, Adam-street, Strand.

The *Veterinary Journal* for this month contains Notes on the Roorkhee Disease by Veterinary-Captain H. J. W. Mann, a disease in which innumerable filariæ are demonstrated, filariæ which in appearance are said to resemble somewhat closely the parasites found in surra, but which differ from these organisms in that they do not attack the red blood corpuscles, but appear rather to confine their attention to the liquor sanguinis. Eight Cases of Tetanus in the Horse treated with the aid of Behring's Tetanus Antitoxin are here recorded, the record being taken from the *Deutsche Thierärztliche Wochenschrift*, from which it is argued that Behring's antitoxin when administered at the proper time and in sufficiently large amounts (in some cases amounts measured in litres) can cure tetanus in the horse. The results obtained differ materially from those recorded by Nocard, but the

author, Veterinary-Surgeon Casper, maintains that these differences are accounted for almost entirely by the greater potency of the serum supplied by Behring with which he was able to work. (We should also add the enormous doses that could be used.) He says that "differences in results must accordingly be sought in the difference in effective value of the antitoxin employed, and there will be no difficulty in tracing them." Accounts of clinical cases and the "Order" of the Board of Agriculture as regards the muzzling of dogs are also given, whilst the veterinary profession are warned that another serious outbreak of pleuro-pneumonia has occurred in England. The Experimental and Clinical Study of the Aspergillus Fumigatus is continued, and a number of other papers and abstracts, notes and news, and reports of veterinary associations are also given.

The *Veterinarian* for April contains several interesting original articles, the first of which, by Veterinary-Captain R. W. Barke, is a note on Malarial Fever or "Surra" in Horses in India, a disease very similar to the tsetse-fly disease of South Africa. An interesting parallel between the organisms found in malarial fever in man and those met with in the blood of horses is drawn, though the author does not adduce sufficient evidence to prove that the diseases are identical or are caused by the same parasite. Mr. A. E. Mettam contributes an account of a case of Cyclopia in the Sheep. In this number there is also an article by the late Professor Walley, Principal of the Royal Dick Veterinary College, Edinburgh, on the Prevention and Suppression of Contagious Diseases of Animals, the last important paper written by him. He draws a distinction between contagious diseases, infectious diseases, and those which are both contagious and infectious. In the first group are included in the present part of the paper "specific urethritis" and "rabies," two diseases which he maintains are purely contagious or infectious only in a limited degree. The Month's Progress and some interesting notes on Current Topics will be read with interest by members of both the veterinary and medical professions. The reports of the various veterinary societies are also of considerable interest.

In the *Phonographic Record* for April Dr. Gowers, after narrating a Case of Hæmoptysis accepted for Insurance as a Loaded Life, lays down the principle that recurring hæmorrhage from the lungs, however slight, should preclude insurance. Mr. Lamming Burton concludes his interesting Notes on the Life of a Ship Surgeon, and says that for pleasure, for health, and possibly for the experience to be gained, the life is to be recommended; but the man who takes a ship in the hope of making money or reading for an examination will find he has made a mistake. The life grows on a man, making it more and more difficult for him to settle down to the humdrum routine of general practice; unless he is a teetotaler and on a good line he will be out of pocket, and the life in time has a lowering tendency, so that a man's sympathies are blunted. But for teaching self-reliance and confidence in one's self the life is an excellent monitor. A ship surgeon should unite a trinity of virtues in a unity of body, and should be a medical man, a sailor, and a card-player. If he can sing or play some musical instrument and has a stock of novels he will be all the more popular. Mr. Peyton Beale writes upon Flat-foot and its Treatment, whilst a short account is given of the efforts which the Society of Medical Phonographers has made to render the inclusion of shorthand in the medical preliminary examination practically effective.

Scottish Medical and Surgical Journal.—Professor D. J. Hamilton (Aberdeen) criticises the view that pulmonary hæmorrhagic infarction (pulmonary apoplexy) is due to embolism, and argues that it is caused by blood from ruptured capillaries injecting a group of air vesicles and their attendant bronchus. Dr. G. T. Beatson (Glasgow) discusses the Value of Cachexia in the Diagnosis of Malignant Disease, and describes a case in which well-marked cancerous cachexia was associated, not with cancer, but with myoma of the uterus. Dr. T. G. Nasmyth gives details of the distribution of cancer in Scotland. Altogether there are nine original articles.

Mercy and Truth.—The mission hospitals described this month are those at Pakhoi and at Hangchow, both in China. There is an article stating that the committee of the Church Missionary Society feels that, as a general rule, it is better for a medical missionary not to be in holy orders.

The Journal of Pathology and Bacteriology. Edited by G. SIMS WOODHEAD, M.D. Edin. Vol. IV., No. III. March, 1897. Price 8*s.* 6*d.*—1. The Varieties of Ankylosis by Bone in different parts of the Skeleton, by Joseph Griffiths, in which the normal ankylosis which occurs between certain bones before birth or at different periods during life, as well as those due to pathological conditions, are fully considered and illustrated. 2. The Mechanism of Reaction to Peritoneal Infection, by Herbert E. Durham. In this paper the changes that take place in the peritoneal fluid are very clearly described, and Mr. Durham makes some suggestions as to the nomenclature of the cells found which will probably prove very useful. Part of this important research was recently communicated to the Royal Medical and Chirurgical Society, and reported in THE LANCET of March 13th, 1897. 3. The Toxins and Antitoxins of Symptomatic Anthrax, by William Hanna. 4. Resistant Forms of the Pneumococcus, by J. W. Eyre and J. W. Washbourn. 5. A Case of Fibrinuria in a Child, by David M. Greig. 6. Fibro-lipoma of the Kidney, by A. S. Warthin. 7. Keratinising Epithelial Tumour of the Scalp, by S. G. Shattock. 8. Formalin as a Preservative for Cultivations of Bacteria. By this method the growth of organisms on different media can be stopped at any period, characteristic appearances are preserved, and the specimens utilised for teaching purposes.

Australian Medical Gazette.—In the February number Mr. G. T. Hankins records a case in which, during the removal of a sarcoma from the left subclavian triangle, the thoracic duct was accidentally wounded. Mr. Hankins then divided the duct completely across and ligatured both ends. The patient made a good recovery, and has, so far, suffered no inconvenience and has gained 7½ lb. in weight. Dr. Sydney Jamieson describes three cases of beri-beri in Chinamen associated with jaundice, in which, post mortem, he found that the bile-ducts were dilated and filled with numbers of fluke (*distoma sinense*). The gall-bladder and common bile-duct contained no flukes. He ascribes the jaundice to the obstruction of the ducts by the flukes.

New Inventions.

THE STETHONOSCOPE.

WE have received from Messrs. Maw, Son, and Thompson, of Aldersgate-street, E.C., a specimen of the stethonoscope, an instrument constructed on the principle of the microphone, and intended to be attached to the ordinary binaural stethoscope, in order to magnify the sounds within the chest. It is stated to be of English manufacture, and it is claimed for it that "the variety of râles can be most easily distinguished, and areas of tubular breathing can be mapped out with greater facility than heretofore. ..... Murmurs can be distinguished which under other circumstances would pass unnoticed." The instrument certainly magnifies sound, but though there are fewer noises produced by creakings of the instrument itself than in the case of the phonendoscope, there are spontaneous noises which at first are very confusing. It does not appear to

magnify all sounds equally, and during a somewhat extended trial of the instrument we have found no instance in which any more information has been obtained about a case than had already been made out by the ordinary binaural stethoscope, except in the case of adults with much deposit of fat on the chest wall, in which the magnification of the sounds was of distinct advantage. The instrument is small and can quite well be carried about in the waistcoat pocket. A chest piece for the binaural stethoscope is supplied with the instrument. The price, in case, is 21*s.* 6*d.*

NEW SURGICAL NEEDLES.

MESSRS. MAYER AND MELTZER, of 71, Great Portland-street, have sent us a set of twelve newly designed surgical needles, which they have called Hagedorn's Reversed Needles. The first six figures of the illustration show the exact size and shape of the fully curved needles; the next

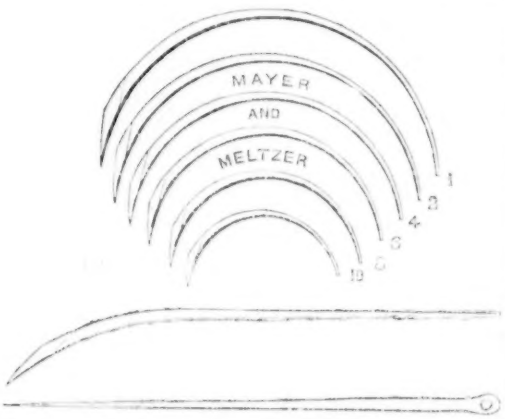


figure similarly represents the largest of the six needles of the straighter pattern. The advantage of Hagedorn's needle is claimed for this pattern in respect that the point is flat, but the eye being reversed, or, in other words, pierced not from side to side of the needle but from front to back, the needle can be held firmly with any ordinary holder, thus dispensing with the costly Hagedorn's needle-holder.

Analytical Records
FROM
THE LANCET LABORATORY.

SCHACHT'S NEW DIGESTIVE FLUIDS.
(GILES, SCHACHT, AND CO., 52, ROYAL YORK-CRESCENT, CLIFTON.)

SATISFACTORY combinations of the active digestive principle of malt with pepsin are the exception rather than the rule, and practitioners will accordingly welcome the introduction by Messrs. Giles, Schacht, and Co., of three excellent and reliable preparations of this order. We have thoroughly tested the "Schacht Bi-digestive Fluid," which is a combination of their "pepsina liquida" with a very active fluid malt. It proved to act powerfully, under proper conditions, both upon white of egg and starch, converting them into easily assimilated food substances. In addition it is by no means unpleasant to the taste. The "Schacht Bi-digestive Tonic" exhibits a similar excellent composition and degree of digestive activity, but contains also the bromo-hypophosphites of lime, iron, and potash, with cinchona and nux vomica. We had no difficulty in demonstrating the presence of each of the constituents thus enumerated; it should prove to be a reliable and valuable therapeutic combination. The third preparation, known as "Coca Bi-digestive," possesses again the active digestive properties of malt, diastase, and pepsin. It is suggested as possessing restorative and stimulant properties referable to the presence of coca extract, and is indicated in nervous depression as a useful digestive agent or in other debilitated conditions. We were easily able to separate the cocaine on suitable treatment with ether, the alkaloid being recognised by producing a marked numbing sensation when rubbed upon the tongue. The preparation, though sweet to the taste, is free from sugar and contains no alcohol. As aids to digestion, especially in enfeebled conditions, these preparations will be of undoubted service.

SOLIDIFIED SOUP SQUARES.
(E. LAZENBY AND SON, 18, TRINITY-STREET, S.E.)

We prepared some of these "squares" in the manner directed, and found them in each instance to yield a really good, palatable, and nutritious soup. The Julienne "square" consists of a cake of extract of meat enclosing a selection of desiccated vegetables, as carrot, onion, &c. The vegetable sections become softened on boiling, while at the same time they impart to the liquid a pleasant vegetable flavour. The tomato "square" consists of a uniform mixture of desiccated tomato soup, stock, and farinaceous substances. The resulting soup possessed the agreeable piquant taste of the fresh tomato. The thickness and starchiness might perhaps be reduced a little with advantage. The gravy "square" was evidently of the same composition as the Julienne "square," but without the addition of vegetables. The mulligatawny square proved to yield a rich, aromatic, but somewhat pungent soup made thick by a proportion of flour. The list includes also carrot, lentil, green pea, household, vermicelli, tapioca, and haricot "soup squares." Judging from those which we tried, which were taken at random, these preparations serve admirably as economical portable, and palatable nutrients.

HEALTH BATH SALT.
(CHARLES JUNE AND CO., 15, LOWER PHILLIMORE-PLACE, HIGH-STREET, KENSINGTON.)

This salt, according to our analysis, consists of a mixture of innocuous materials, chiefly bicarbonate of soda and borax, for use in the bath. It could be made more pleasant by the selection of more agreeable aromatic agents. It smells decidedly of turpentine, with a trace of orris root, which latter is more perceptible when the salt is dissolved in water. It may be used in the bath with advantage as contributing more effective detergent properties than when soap and water are alone employed.

(1) ESSENCE OF COFFEE; AND (2) COFFEE WITH CHICORY.
(PEEK BROTHERS, WINCH, AND CO., 20, EASTCHEAP, E.C.)

The genuineness of both these preparations is evidenced in the fact that we obtained a satisfactory yield of the stimulating principle, caffeine, on suitable treatment. The pleasant aromatic flavour of the freshly roasted berry is also preserved. In this respect the flavour of the coffee preparation unmixed with chicory is, we think, superior, although, of course, the latter possesses more body, and on that account may be preferred by not a few. Both preparations are as satisfactory as any we have previously examined, and an instructive comparison of the merits of various coffee extracts will be found in THE LANCET of July 7th, 1894.

ANTISEPTIC PELLETS.
(THE SANITAS COMPANY, LIMITED, BETHNAL-GREEN, E.)

The convenience of these pellets for the extemporaneous preparation of an antiseptic solution of definite strength is obvious. Thus one of the corrosive sublimate pellets, which are coloured blue when dissolved in half a pint of water, yields a solution containing one part of corrosive sublimate in 1000 parts of water. This constitutes the antiseptic solution prescribed by the Local Government Board. The permanganate of potash pellets contain five grains of the salt, so that

one dissolved in a pint of water gives a conveniently strong disinfectant solution; whilst one dissolved in one ounce of water yields approximately the liquor potassii permanganatis B.P. The carbolic acid pellets contain two grains of the acid, which, dissolved in half a pint of water, give a solution convenient for most purposes.

PERFECT HEALTH RUSKS.

(A. J. G. KING AND SON, 19, REGENT-STREET, SWINDON, WILTS.)

Special attention appears to have been given to the choice of ingredients in the preparation of these articles of food. Thus the milk used is sterilised, and a certain proportion of malt extract introduced. The rusks are acceptably crisp, and of a somewhat sweet flavour due to the malt sugar, and to the digestive effect of the diastase upon the carbohydrates. They contain a small proportion of branny particles; they are well made and afford a useful and convenient form of food.

EMULSIO OL. MORRHUÆ (HAYES).

(R. O. HAYES, HAYWARD'S HEATH, SUSSEX.)

The following formula is suggested to enable the quick preparation of a satisfactory emulsion and its administration when freshly made: sodium hypophosphite, 20 grains; liquor calcis saccharatus, 1 drachm; cinnamon water, 1 ounce; cod-liver oil, 1 ounce; and oil of cinnamon, 1 drop. The soda salt and lime syrup are placed in a three-ounce bottle with the proper quantity of water, and after solution has taken place the contents are transferred to a measure. Into the bottle thus emptied the cod-liver oil, to which one drop of cinnamon is added, is poured, and to this are added the hypophosphites and lime mixture in quantities of a drachm at a time, shaking well after each addition. In this way an excellent emulsion may be extemporised in a few minutes, and it keeps for a fairly long time without separation. We succeeded in obtaining a good emulsion by following these simple directions, a knowledge of which should prove useful to practitioners. The suggestion is said to be the outcome of considerable experience in the preparation of emulsions.

CARBOLIC LOZENGES.

(BLAKE, SANDFORD, AND BLAKE, 47, PICCADILLY.)

Lemon flavouring is employed in these lozenges to mask the taste of carbolic acid. It is a very successful combination, the disagreeable flavour of carbolic acid in the mouth being fairly well disguised. They afford a useful and convenient means of administering small doses of the acid as a local antiseptic.

BUBONIC PLAGUE IN BOMBAY.

ACCORDING to the weekly returns published on the 15th inst. there were 390 cases of plague, of which 194 proved fatal, in Bombay, against 360 cases and 323 deaths in the preceding week, and the mortality from all causes was 970, against 1007. It is estimated that the total number of cases of plague in Bombay since the outbreak of the epidemic amount to 11,333, of which 9493 were fatal. The official reports received by the Secretary of State from the Governor of Bombay contain pretty full information regarding the state and progress of the epidemic. The Governor states that, as regards Poona, satisfactory progress is being made in disinfection and sanitary work and in the diminution of mortality. The death-rate in the Mofussil, however, continues high. In Poona city for the week ending March 12th last, the deaths from plague and from all causes were 160 and 434 respectively; for the week ending April 9th they were 149 and 219, the normal weekly deaths being from 60 to 70.

"In the Mofussil districts the figures are:—Surat district, 310 cases, 220 deaths; Thana district, 369 cases, 323 deaths; Satara district, 1 case, 1 death; Ratnagiri district, 6 cases, 3 deaths; Kolaba district, 176 cases, 155 deaths; Poona district, 1 case, no death; Ahmedabad city, 1 case, 1 death; Kathiawar, 15 cases, 13 deaths; Cutch, 18 cases, 12 deaths; Baroda, 51 cases, 39 deaths; Palanpur, 23 cases, 19 deaths; Karachi city, for the week ended April 9th, 161 deaths. Search parties are at work; disinfection of clothing and bedding of all suspicious arrivals at Karachi is enforced. In Haidarabad and Sukkur number of plague deaths increased. Two-thirds of Sukkur is described as deserted and three-fourths of population said to have left. No signs yet that Rohri or Shikarpur is infected."

A long report from the *Times* correspondent at Simla on the 18th inst. is published in that journal of the 19th inst. It gives a description of the progress of the plague in Western India and Sind. The disease, which was at first described as bubonic fever, appeared in Bombay city early in October, 276 deaths being officially reported in that month. The deaths went on increasing during November, December, and January, and in February had reached 3072; there was a fall in March, and a still further fall during the first fifteen days of April, when they dropped to 804, showing a marked improvement. "The week of highest mortality was that ending on Feb. 9th, when the deaths from all causes in Bombay were 1891, or at the rate of nearly 120 per mille on the assumed population of the city, from which some 300,000 people had fled. This rate had sunk to under 71 per mille in the week ending March 30th, and it is now considerably lower owing to the practice among the native population of concealing cases. The official returns show only known deaths from the plague, whereas many thousands more must have occurred. Hence the true test of the decline of the disease is the falling off in the number of deaths from all causes. The returns recorded officially give 11,300 seizures with 9662 deaths in Bombay city from Oct. 2nd to April 15th. The percentage of recoveries was thus very small."

"In Karachi the plague broke out on Dec. 10th, 59 deaths occurring in that month. The mortality rose to 745 in January and 971 in February, and then sank to 868 in March, while 301 deaths have been reported in the first half of April, which goes to show that the disease is declining as in Bombay."

The plague in Karachi seems to have been of a severer and more fatal type than in Bombay, 2944 deaths having occurred out of 3531 cases.

The statement in the *Times* goes on to furnish figures and details of the epidemic in the areas outside Bombay and Karachi—in Thana, Poona, Surat, Colaba, Sukkur, and Haidarabad (Sind), and other places. The *Times* correspondent concludes his statement as follows: "To review the whole position, the area of which the plague has taken hold forms less than a tenth part of India. The disease shows no signs of spreading into the heart of the country, and it is reasonable to hope that it may gradually die out, as fewer cases are now reported from day to day."

The Governor of Bombay has been occupied in making some conciliatory and explanatory speeches at Poona and elsewhere regarding the aim and object of the Epidemic Diseases Act, and has given his assurance that the Government was doing everything in its power in the interest of the people to stay the plague. Great care will be taken to make proper arrangements for male and female patients and to protect the privacy of the latter by the employment of females to visit and attend upon them; also to feed the sick and to indemnify the owners of property that had to be destroyed. Of course, there have been various exhibitions of resentment and some rioting here and there on the part of the Mahommedan population, but the opposition to Government measures has so far been much less than might have been anticipated. We are glad to be able to congratulate Mr. Hankin on his recovery; his services generally in India have been very great, and he has not spared himself during the present epidemic; indeed, all have worked enthusiastically and well during the crisis which is, we trust, now subsiding.

NORTH-WEST LONDON HOSPITAL.—The annual meeting of the North-West London Hospital was held in the institution on April 6th, Lord Rathmore presiding. The report showed that during the year there were 578 in-patients under treatment; there were also 17,800 new out-patients, and 38,545 attendances. The total income for the year was £6863, including £1000 from Baroness de Hirsch, £1000 from Mr. Herring, £383 from the Hospital Sunday Fund, and £149 from the Hospital Saturday Fund.

THE LANCET.

LONDON: SATURDAY, APRIL 24, 1897.

THE enormous responsibility of the medical profession with regard to hospital abuse becomes more and more apparent the more closely we investigate and study the subject. The profession is used by hospital authorities for their own purpose and very much according to their own sweet will. If the out-patient rooms have to be enlarged, or if a little money has to be made by applying wards meant originally for the poor to the purposes of those who can pay, the members of the medical staff are expected to fall in with the views of the committee and to accommodate their services to the exigencies of the situation. And hitherto the profession has proved most acquiescent. There is scarcely an instance on record of emphatic protest and refusal to fall in with schemes which are ruining and demoralising medical practice. We make every allowance for the insidious and gradual growth of the system of indiscriminate hospital relief and for the kindly motives with which it has been associated in the minds of the promoters and in the minds of the members of the profession who have been its principal supporters. We remember the exigencies of medical education and all the arguments with which on this score such a system has been defended. But with all deductions and qualifications the fact remains that hospital practice is threatening private practice and that the public is being demoralised by indiscriminate medical charity in a way for which there is no excuse and which has no parallel in connexion with any other department of human wants; and we feel that for this state of matters the medical profession has largely itself to thank and to blame.

It is customary to speak as if the principal responsibility for this serious state of matters rested with the medical staffs of the hospitals. And undoubtedly this is true. Moreover, we ourselves have been foremost in pointing out that such is the fact, and at this critical juncture we look chiefly to them for the salvation of the profession from this huge evil. They are not selfish men. They are for the most part men of high education, proud of the traditions of the profession and of the old-fashioned charity which has created and maintained our voluntary hospitals for certain high purposes. They do not want to see these noble institutions converted into cheap dispensaries, demoralising those who come to them and sapping their self-respect and providence. Moreover, as medical teachers they have a real and natural interest in the success of the pupils they educate, and would not willingly compete with them in the less pretentious ranks of general practice. If they have done much harm we believe it to have been done unconsciously and unintentionally, and we are certain that when convinced of the fact they will be the first to demand reform in hospital administration and to vindicate the rights of private practice. By united action and representation they could reduce the scandal of hospital abuse in six months to half its proportions, and in twelve months they could practically abolish it altogether. They have the ear of the committees, executive and general, of the hospitals. They know the working of the evil system, and how, without much direct benefit to them, it threatens the very basis of private practice. Their intercourse with general practitioners must suffice to supply them with constant instances of men, whose education they have conducted and whose efficiency they know, being discouraged and dispirited in the battle of life, waged in neighbourhoods which cannot altogether do without them, but which the hospitals demoralise by gratuitous attendance or by a system of petty charges which convey the lowest suggestion of the value of medical service.

But while we think seriously of the way in which the honorary staffs of hospitals are responsible for hospital abuse we do not think that they are the only members of the profession who are to blame. General practitioners are themselves often parties to hospital abuse. For one reason or another they send patients, whom they know to be capable of paying private fees, to hospitals and often to particular members of hospital staffs. It may be to please the patient or to rid themselves of the trouble or responsibility of cases which they do not care personally to treat; it may be to humour the meanness of a patient who could pay but would rather not; but on some ground or other of a doubtful character they often suggest the hospital to patients who can afford to pay a reasonable fee for a private consultation. When the question comes to be investigated further this statement will be borne out, and the members of the medical staffs will be able to show that in cases of abuse they are often acting on the suggestions of private practitioners. It is in vain for general practitioners to complain of hospital abuse if they themselves are parties to it. No doubt a decent and respectable private patient, from the general practitioner's point of view, may often be incapable of paying the fees of a consultant whose opinion the practitioner desires. But ways of meeting this difficulty will be found when the different sections of the profession whose business it is to rectify present abuses come into friendly consultation for the purpose. We content ourselves here with saying that both consultants and general practitioners are to blame, and that they will be wise to confer with each other on the subject rather than indulge in mutual accusations. One thing is certain, that both consultants and general practitioners are serious sufferers from the existing state of things. Patients who can pay consulting fees and the fees of general practitioners are shown to be receiving gratuitous treatment in all our hospitals for comparatively slight diseases as well as for grave ones. For the sake of their common interests, as well as the interests of the public, both sections of the profession should consult together for the remedy of this grave abuse of charity.

THE annual summary of births, deaths, and causes of death in London and other great centres of population has at length been issued from the General Register Office. This publication, which relates to the year 1896, appears th s

year even later than is usual. And inasmuch as the annual reports of the metropolitan medical officers of health cannot be completed until certain statistical information which the summary contains is available, it follows that the presentation of these important documents to the local authority is also delayed in consequence. We are led to make these remarks, not from a desire to find fault unnecessarily with a public department, but because we attach a high value to this particular publication of the statistical department of Somerset House. We candidly express our appreciation of the improvements which have been effected of late in the Registrar-General's annual summary and annual report, as well as in his weekly and quarterly returns; and it is to direct attention to a most important statistical development in the present summary that the following remarks have been penned. The information contained in the present issue differs in no appreciable degree from that presented in previous summaries so far as the thirty-two great towns outside the metropolis and the sixty-seven other large towns dealt with by the Registrar-General are concerned. It is in respect of London, and especially of its forty-four sanitary areas, that we notice the chief innovations in the summary for 1896.

We are told that the rates of mortality in the sanitary areas of the metropolis, when calculated on the deaths locally registered, convey very erroneous ideas of the relative healthiness of these areas. The presence of hospitals, workhouses, and other large public institutions in certain parts of London unduly raises the recorded death-rate of the areas in which they are situated, whilst the mortality of other areas from which patients have migrated to those institutions is correspondingly lowered. Until the deaths occurring in public institutions have been distributed to the sanitary areas from which the patients originally came no reliable rates of mortality for these areas can be calculated. For some years past the deaths occurring in metropolitan institutions have been distributed to the areas from which the patients were derived, but no attempt has been made to calculate rates of mortality in the absence of reliable data as to the population of these areas. In the present summary the actual rates of mortality from all causes, and from certain specified causes, are published for the first time, the inauguration of a quinquennial census for London in 1896 having rendered it practicable to form estimates of population from year to year which perhaps may be regarded as sufficiently accurate for this purpose Several tables are given showing the death-rates in the several metropolitan areas after due correction for institution mortality. In the case of phthisis, for example, some of the London sanitary areas afford striking testimony as to the necessity of distributing deaths occurring in public institutions in order to arrive at a fairly reliable measure of local mortality from that disease. Thus, for example, in Kensington, which area contains the Marylebone Infirmary and the Brompton Hospital for Consumption, 407 deaths were registered during the year 1896; but it was found on examination of the entries relating to these deaths that nearly half of them were of non-residents which had taken place in Kensington public institutions. After distribution of these deaths the Kensington death-rate from phthisis was reduced from 2·35 to 1·42 per 1000. St. Olave is another sanitary area similarly in point. This area contains Guy's Hospital, the deaths of non-residents occurring in which had the effect of raising the registered death-rate from phthisis of St. Olave by 3·04 per 1000 in excess of the true rate. On the other hand, St. Margaret Westminster, Clerkenwell, Limehouse, St. Saviour's, St. George Southwark, and Newington are examples of sanitary areas the death-rates from phthisis of which have been very considerably increased by the apportionment thereto of deaths from phthisis which had occurred in hospitals outside the boundaries of those areas.

An interesting table is inserted at page 7, in which the death-rates of the various sanitary areas of London are given (1) as registered and (2) after distribution of deaths in public institutions. Study of this table at once shows the effect of distribution in the case of London sanitary districts. Take, for instance, the case of Hampstead, which in 1896 had a registered death-rate from scarlet fever of 1·22 per 1000; correction reduced this rate to 0·09. The registered death-rate of the same district from diphtheria was 3·24, but when the deaths were distributed it fell to 0·39. On the other hand, the district of Chelsea had a recorded death-rate of 0·51 only from diphtheria; but when the hospital deaths were fully distributed the rate became 1·17. The effect of distribution is even more apparent in the case of mortality from phthisis, and the table referred to gives numerous instances of important alterations of the local death-rates attributable to this disease. In the year 1896 the net gain in life saved in London was represented by 6854 lives. In other words, had the average death-rate in 1886–95 continued throughout 1896, that number of lives would have been sacrificed in addition to those actually lost. In this year there was in London an excess of 938 deaths from measles, 797 from diphtheria, 256 from whooping-cough, and 483 from cancer. Under most of the headings the mortality in 1896 was below the average.

THE subject of premature burial has recently been discussed in Paris, and although the result has not brought the contending parties to general agreement on the value of the signs of death, it has served the purpose of showing that there is still much to be desired in the verification and certification of that event. In the large towns in France there exists a system which would, if properly carried out, afford a satisfactory safeguard against "live burial." Two certificates of death are required, firstly, by the medical attendant, and, secondly, by the official verifier. But Dr. OSCAR JENNINGS has shown that the latter too often performs his duty in a perfunctory manner, instead of satisfying himself of the fact of death by strict personal observation. Thus far the fault lies not with the legislature but with the executive, but there are said to be out of 36,000 communes (parishes) in France 29,000 without any medical practitioner, and consequently in such there is no medical certification. It is against Sir HENRY THOMPSON'S eulogy of the French system that Dr. JENNINGS brings these damaging statements. It is computed that in England 15,000 persons are annually interred without medical certificates of any sort, while in the North of Scotland this applies to 50 per cent. of the population. No one will demur to the assertion that in

most, if not in all, of the European States certification of death is still inadequately provided for, and whilst this is the case many criminal acts will continue to escape detection.

But Dr. JENNINGS's advocacy is directed against premature burial, and the basis of his contention is the value of the signs of death. Having subjected each to critical examination, he arrives at the conclusion that the only infallible proof is post-mortem decomposition. We do not propose to review in detail all the means, scientific or secular, that have been suggested as proofs of death. Many antiquated popular ideas have long since been rejected as unworthy of serious consideration, but a slight sketch may not be out of place here. The erstwhile common procedure of placing a feather over the nostrils to ascertain if breathing had ceased met with decisive refutation of its value in SHAKESPEARE'S description of the death of King Henry IV. It will be remembered that Prince Henry, who sat and watched his father, exclaimed :—

> "By his gates of breath
> Their lies a downy feather which stirs not;
> Did he suspire, that light and weightless down
> Perforce must move."

But ere the king expired he gathered strength to administer reproof to, and bestow an intensified blessing on, his son. A somewhat similar incident pertinent to the issue of the "breath of life" is to be found in *King Lear*. The aged monarch, bearing the dead body of Cordelia, delivered himself of the imposing words :—

> "I know when one is dead, and when one lives;
> She's dead as earth. Lend me a looking-glass;
> If that her breath will mist or stain the stone,
> Why, then she lives."

These classical presentments are the records of what was then considered as the passage of the Angel of Death. Even yet a procedure to prove the cessation of breathing, and inferentially of life, is sanctioned by some high authorities. Sir HENRY THOMPSON says: "To detect whether a patient is dead or only in a trance, place a shallow vessel brimful of water upon the chest. If there is any life the liquid is bound to be agitated in a greater or lesser degree." We are compelled to subscribe to the reply of Dr. ICARD in his recent work (1897). "The test is untrustworthy, for besides the act of breathing there are other conditions, such as the fermentation of cadaveric fluids and post-mortem diaphragmatic movements, which may cause vibratory movements in the liquid; on the other hand, these movements may be wanting although respiration is going on, by reason of the absolute fixity of the chest wall, the breathing being carried on by the insensible movements of the diaphragm." It may be noted that in the experiment in question it has been recommended to watch the movement of the image of an object mirrored in the water, as well as to observe the vibratory movement of the water itself. The rippling of the surface from actual respiratory movement of the chest would probably be more uniform and rhythmic than if due to an adventitious cause.

The unreliability of the respiratory test led observers to centre their attention on the question of cessation of the heart's beat. Previously to 1846, when BOUCHUT published his researches, made with the aid of the stethoscope, it was difficult, and, indeed, well-nigh impossible, to arrive at a definite conclusion on the matter; and at the present time it is asserted by some that the cardiac pulsation may be so weak as to be unrecognisable by the means at our disposal. BOUCHUT undoubtedly erred in making too short the period of time elapsing after the heart's sounds ceased to be audible which he took as proof of, death. Nevertheless, if an interval of five minutes elapses the presumption of death is great. If no cardiac sounds can be heard after the respiration has apparently ceased for half an hour, it is well-nigh, if not absolutely, certain that life is extinguished.

In discussing the subject under notice it should be borne in mind that after somatic death molecular life, taken in terms of physico-chemical action, continues. Thus the irritability of the muscles is not at once extinguished. The temperature of the body in some cases, and notably where death has supervened upon an acute febrile affection or upon a cerebral lesion, continues to rise after the patient's decease, so too much reliance must not be placed on the body heat taken unconditionally. As regards the rigidity of the body, a careful observer could scarcely be deceived, for in the rigidity of trance the temperature is more or less sustained; moreover, the whole body becomes equally rigid at the same time. If the limbs of a person in cataleptic spasm be flexed the rigidity soon returns, whereas in cadaveric stiffness it re-appears slowly or perhaps not at all. It is impossible to assert that such a ghastly event as burial of the living has never occurred. There are well authenticated cases of bodies having been laid out for interment that yet retained their vitality; still, if the list of alleged burials of the living were subjected to critical examination we opine that it would dwindle to very narrow proportions. We ardently support the reform of death certification. No argument is needed to enforce the desirability—nay, the paramount necessity—of efficient death verification; but we cannot acquiesce in the proposal that no interment should take place prior to the advent of cadaveric decomposition, believing as we do that a conscientious medical observer can verify the decease of a human being before the body is "green in death and festering in a shroud."

Annotations.

"Ne quid nimis."

WORKHOUSE NURSING.

WORKHOUSE nursing seems to have been attracting a considerable amount of public attention lately, and seeing that THE LANCET has played an active part in this arena, we feel it our duty to call the special attention of our readers to this matter. Mr. Ashton, M.P., asked in the House of Commons in May last for a return showing the number of persons occupying the sick wards in workhouses and infirmaries on June 1st, and the number of paid officers, probationers, and pauper helps employed in attending on them. A very large number of figures are given in the return concerning the different workhouses and infirmaries throughout England and Wales. We do not, however, think it worth while to criticise them at any length, because the whole return is the subject of a very serious fallacy. On June 1st the numbers of the inmates of workhouses and infirmaries are at their very lowest, and experienced Poor-law officers generally

reckon that there are in the summer very little more than half the number of inmates who are in these institutions during the winter months; and as the paid staff and the number of helpers are not reduced at the slack time of year, the proportion between the patients and the nurses and pauper helpers who attend on them, as represented by this return, is no guide whatever to what really obtains during the rest of the year. If any inferences were to be drawn from these figures as to the adequacy, or rather inadequacy, of the supply of nurses, they would be wholly misleading. "Provided, fifthly, that any pauper of the fourth class whom the master may deem fit to perform any of the duties of a nurse or assistant to the matron may be so employed in the sick wards." The inmates belonging to Class 4 are "women infirm through age or any other cause." These are the words in which the Poor-law Commissioners, by Article 99 of their General Order, dated Dec. 8th, 1847, instructed the masters of workhouses, both London and provincial, in the duties of their office and the classification of paupers. This article was the origin of "pauper nurses," the article which rendered them official; and this, if we mistake not, is the cause of their perpetuation at the present day. The abuses to which it gave rise were the subject of a very exhaustive inquiry initiated by the Founder of THE LANCET many years ago. It is therefore with great regret that we notice that this old and obsolete article is still unrepealed; and it is also with corresponding pleasure that we see that at last the masters of workhouses themselves—namely, those officials with whom these evils are ever present and by whom their rectification should really be initiated—have evinced some interest in the matter. Our contemporary, the *Local Government Chronicle* of April 3rd, contains the report of a meeting of the Workhouse Masters' Association, and prints *in extenso* a paper contributed by Dr. Malden, medical officer to the Tonbridge Union Workhouse. It is too long for us to notice at any great length, but in general terms it has our cordial approval, and we hope that it may be the means of stirring workhouse masters and matrons to a sense of their responsibilities in the way of inducing the guardians to provide adequate nursing for the sick in workhouses. We are amused to notice in the discussion which followed that some of those present seemed to complain that the Workhouse Nursing Infirmary Association was not the right body to carry out this reform. It is true, quite true, that a philanthropic body should not perform the duties of masters of workhouses and guardians of the poor, but if those individuals do not discharge the duties which they owe to the sick poor, surely they cannot complain if other people step in and fill their places. As regards some adverse remarks made against this association—to which, by the way, the speaker owed her training—we have it on the best authority that the association is very careful never to interfere with the internal administration of workhouses so long as a skilled and properly trained nurse is supplied with the means of carrying out her duties thoroughly. The great work which this association has done is pointed out in a later issue of our contemporary, where it is mentioned that during the past eighteen years that body has spent over £3000, collected in voluntary subscriptions, in training and supplying to workhouses and infirmaries nearly 800 nurses.

A CURIOUS VERDICT: A CORONER'S VIEW OF MEDICAL EVIDENCE.

AN unfortunate occurrence happened a few days ago in the Wigan Corporation Baths. A young man, who had gone on the previous evening to have a bath (the ordinary slipper bath), was found by the attendant next morning (when taking a person to have a bath) dead with his head completely under water. An inquest was held in due course, and the jury, without having any medical evidence as to the precise cause of death, found "that death had resulted from failure of the heart's action (syncope) whilst the deceased was having a bath." They further stated that they were hardly satisfied with the evidence given, and as there was a police doctor they would have preferred to have heard some medical evidence in connexion with the case. The coroner asked if they would like the inquest adjourned for medical evidence, but the foreman of the jury thought it hardly necessary. The coroner then said, according to the *Wigan Observer* of the 10th inst., "that where the cause of death was so apparent they considered that it was unnecessary to have medical evidence. In fact, it was like throwing ratepayers' money away, and in that case they considered they were saving it. A medical man would not give evidence as to the cause of death when he was called in after death unless he made a post-mortem examination, which was not only objectionable to the relatives, but rather expensive." In this case, where an unfortunate young man was left in a bath all night, the most searching inquiry should have been held, not only to find out if anyone was to blame for neglect, but to ascertain whether the death was from natural causes or from drowning. Such could not be done without a post-mortem examination; and if the coroner thinks that the sum of one guinea remunerates a medical man for this disagreeable work he is much mistaken. Many medical men would prefer not to make such an examination, but know that it must be done if the true cause of death has to be found. And what is the value of an inquiry like this? If the coroner knew that the man had died from natural causes, why did he summon twelve good men and true away from their businesses? Such an inquiry without a post-mortem examination is useless.

LUNACY IN EGYPT.

DR. JOHN WARNOCK'S annual report on the Cairo Lunatic Asylum for 1896, although only half as long as its predecessor, is, nevertheless, a notable record of continuous progress in the only hospital for the insane which Egypt possesses. Mechanical restraint of every description has at length been completely abolished, and owing to the introduction of pass keys and substantial asylum locks it has been possible to re-arrange the establishment into six sections containing 70 patients each. A new system of drainage has been adopted, so that all foul water now flows out beyond the hospital premises instead of into percolating cess-pits inside the walls. This is, doubtless, advantageous to the institution, but as Cairo is not yet sewered the adjoining ground must necessarily suffer. A great many structural alterations and additions were completed during the year at a cost of £E3573, and equipment valued at £E827 was also added to the existing stock. Many innovations, however, are still required, including a male infirmary, a laundry, additional first- and second-class accommodation, and extension of the section for cases of acute insanity in men. The estimated expense is £E5840, and Dr. Warnock hopes that some at least of the items may be supplied, "notwithstanding the many other claims on the finances of the country." The number of inmates has fallen from 488 to 417. "This is partly due to the cessation of admissions during the cholera outbreak" and partly to the impossibility of properly accommodating more than 420. The "average daily number resident" was 477 (337 males and 140 females). In the course of the year 425 cases were admitted, no fewer than 136 of them being re-admissions, some for the eighth or ninth time; 145 of the new patients bore marks of injury more or less severe, nine among the number having broken ribs. Many of them had "broad scars over vertex, temple, and occiput, due to cauterisation

when in their homes," and marks left by ligatures were frequently visible on their wrists and ankles. There is no separate section in the asylum for criminal cases. In addition to ordinary prisoners and persons under police surveillance 23 individuals accused of capital crimes were sent in from the tribunals for observation or treatment. 29 general paralytics were admitted in 1896, against 19 in the previous year, 4 of the number being Greeks. Only one was a fellah; the others were pedlars, servants, artisans, &c. Dr. Warnock thinks it is probable that general paralysis exists in Egypt to a much larger extent than was formerly believed, but does not give the reasons on which this opinion is based. The relation of the affection to syphilis receives support from his observations. "Hasheeshism still remains the most potent cause of insanity in Egypt"; 90 of the admissions were clearly due to abuse of the drug, and there is reason to believe that "the real percentage of male admissions caused by hasheesh is nearer 50." 81 deaths took place during the year, including 23 from tuberculosis and 10 from cholera. The number of foreign lunatics at present in the asylum is 41, chiefly Greeks, Jews, and Syrians. They occupy room which can only be ill spared, but apparently it is impossible to get rid of them. Some of the Syrians are brought to Egypt on purpose to obtain admission, as there is no establishment for the insane in their own country. Dr. Warnock has been informed that some lunatics are kept in Damascus in stone cells, with chains round their necks.

CASTRATION FOR ENLARGED PROSTATE.

THE misery of existence for anyone suffering from enlarged prostate and all the evils which this affection brings in its train have been so universally recognised that it is no wonder that surgeons should have been for some time seeking some method of relief. Prostatectomy is dangerous and oftentimes brings no amelioration of the trouble; therefore, it was proposed by Professor White of Philadelphia to cause shrinking of the prostate by removal of the testicles, a result which undoubtedly sometimes does follow. The operation, however, is liable to be followed by various unpleasant symptoms and in some cases by death. Mr. F. E. Fremantle, of Guy's Hospital, recently read a paper before the Physical Society of that hospital, wherein he has carefully collated all the published literature on the subject so far as he could, and has compared the relative advantages of bi-lateral castration, uni-lateral castration, and excision of the vas deferens. Shortly, his conclusions are as follows:—1. Removal of the testes in cases of hypertrophied prostate causes a relief of symptoms, and usually a reduction of the hypertrophy analogous to the effect of oöphorectomy on uterine fibro-myomata. 2. Shrinking of the prostate is probably due to the removal of some sub-conscious reflex stimulus, normally conveyed to it from the testes by way of a lumbar spinal centre. 3. This is more especially suggested by the fact that removal of one testis will sometimes cause a corresponding one-sided shrinking of the prostate. 4. The immediate or rapid relief of symptoms in these cases is almost entirely due to relief of congestion and œdema in the lymph-spaces and venous plexuses of the urethra and prostate. 5. Double castration is less dangerous than prostatectomy, and will cause an amelioration of the chief symptoms in about 80 per cent. of the cases. 6. The mortality is greatly increased by operating on patients with advanced kidney disease, and operation in early stages will be performed with a better chance of complete cure and almost without risk to life. 7. If castration be refused, after a firm and honest statement of the dangers of refusal, excision and torsion of the vasa deferentia, although of less certain efficacy and of doubtful moral expediency, may with regret be recommended. Mr. Fremantle's paper, which was published in the *Guy's Hospital Gazette*, is a carefully compiled summary of present opinion upon the subject, and although, as the writer himself says, it does not pretend to any originality, it will be found useful for reference.

KING'S COLLEGE SCHOOL.

THE Council of King's College, London, has sanctioned a reduction of 20 per cent. in the fees of all boys who pass after not less than five terms of study from King's College School into the medical school. King's College School has recently been removed from the Strand to Wimbledon Common, where a large mansion has been purchased standing in what we are informed is an unimpeachable site. Certainly Wimbledon is a thoroughly pleasant and healthy suburb, in every way suitable for school premises, and we may anticipate for the school in its new quarters a maintenance of its good moral tone and high level of scholarship.

DRINKING A QUART OF WHISKY.

THE folly, in a young man aged twenty years, of drinking a quart of whisky for the wager of £1 would seem incredible were it not that the literature of medical jurisprudence supplies us with several similar instances. One is recorded by Professor Christison in his book on Poisons—that of a London cabman who, for a bribe of 5*s*., drank at a draught a whole bottle of gin. In a few minutes he dropped down dead. The same high authority says that such accidents are not infrequent in Scotland. He gives one instance of death in four hours. The victim was a man who had stolen a bottle of whisky, and as the surest way which occurred to him of escaping detection drank it all. In the case recently reported death seemed to occur in about eight hours. There was a difference of opinion at the inquest as to the complicity of others. It was not proved that the publican was aware of the use to be made of the drink which he supplied. It would seem to be but right that the other party to such an experiment should be held responsible for the consequences.

EPIDEMIC SMALL-POX IN NEW ORLEANS.

AN interesting statement, illustrative of the malignancy of small-pox, is contained in the Report of the British Consulate on the Trade of New Orleans for 1896. The statement consists of an extract from the record of the small-pox outbreak in New Orleans in 1895–96, and is from the pen of Dr. Woods, the chief sanitary inspector of the city. The extract is so pithy and significant that we have no hesitation in reproducing it as given in the Consular Report: "In February, 1895, a man came here from Arkansas, and afterwards developed a well-marked case of variola. At that time the disease existed all over the Eastern Arkansas and Western Tennessee counties. Otherwise than in a very general manner we could not further or more definitely trace the origin of the disease. From this case others in due season developed. In February, 1; in March, 4; in April, 3; and in May it reached the alarming proportion of 58 cases; in June there were 36 cases. After the first case in February the authorities vaccinated all parties living in the infected localities—that is, all who would accept vaccination. The clothing, bedding, and wearing apparel, except those worn by the patient when sick, and the bed upon which he slept, were subjected to boiling water for thirty minutes, and afterwards left over night in a bichloride solution of 1 in 1000. Those articles and fabric coming in direct contact with the patient were destroyed by fire. All carpets and matting in the patient's room were also destroyed by burning. The walls, floors, all furniture and fixtures, the galleries, and even walks, yards, and outhouses, were sprayed or otherwise washed down with a bichloride solution of 1 in 1000. The interior of the house, after thoroughly closing the openings and chinking all cracks, was subjected to sulphur fumes for nine hours, with from 5 to

7 lb. of sulphur candles to 1000 cubic feet of air space. With these rigid measures observed in every instance of the disease the outbreak was in a manner controlled during the summer months of 1895, but with the advent of winter the disease seemed to take a fresh start, having been re-introduced from time to time from the country parishes where it existed to quite an extent. In the fall of 1895 a very rigid vaccination campaign was inaugurated by the Board of Health, and the work was not stopped until the entire city had been canvassed by a large and efficient corps of physicians, who systematically, by districts, went from house to house offering and urging free vaccination. During this campaign 53,437 people were vaccinated and re-vaccinated. After this systematic vaccination campaign was over, and the influx of darkies from the country parishes had ceased, the disease steadily decreased. In March, 1896, we had the greatest number of cases of any month during its prevalence, reaching a total of 334 cases. Since the introduction of the disease in February, 1895, we have had 1126 cases with 291 deaths, making a death-rate of 25·84 per cent."

ICHTHYOL IRRIGATION OF THE URETHRA FOR GONORRHŒA.

WE publish in another column an interesting account of eighty-two cases treated in this way which have been recorded by Dr. Werner. Gonorrhœa so often proves intractable and the complications and sequelæ connected with it are so numerous and severe that every new method employed in its treatment is worthy of careful attention. The intractability of the disease is really due to the difficulty which exists in bringing an efficient antiseptic in contact with the gonococcus without injuring the mucous membrane. Janet's method of irrigation is especially useful in that the fluid pressure distends the urethra, and so obliterates the folds of the mucous membrane which shelter the organism from ordinary injections; but the method is by no means free from risk, for the inflow of the solution used may carry gonococci with it, and so cause not only an extension backwards of the urethritis, but also cystitis and epididymitis. Ichthyol is a fairly good antiseptic, and as the cases quoted show, can give much better results than the permanganate of potassium originally used by Janet.

SWINE FEVER.

THE Departmental Committee of the Board of Agriculture appointed to inquire into the etiology of swine fever have issued their second Report, containing experimental and other evidence of great interest. The committee refer to pneumonia of the pig and to swine erysipelas, two diseases distinct from swine fever, and incidentally referred to in the first Report. Pneumonia of the pig is recognised by American veterinary surgeons as a disease distinct from swine fever and is regarded as identical with the disease known in Germany as *schweinseuche*. The same bacterium has been found in both countries in association with this disease. The committee obtained cultures from Dr. Salmon of America and from Professor Schütz of Germany, but they found that the cultures had only a feeble effect on pigs, though highly virulent to rabbits and pigeons. The committee isolated a bacillus, indistinguishable from the *schweinseuche* bacillus, from the lungs of English pigs affected with pneumonia complicating swine fever, and they conclude therefore that the pneumonia of the pig, which is occasionally encountered as an independent disease and sometimes in association with swine fever, is to be ascribed to organisms which are "generally saprophytic and only in particular circumstances able to multiply in the air passages, and thus induce pneumonia.' With regard to swine erysipelas the committee have not been able to find any outbreak of the disease in an acute or epizootic form in the United Kingdom, but they made the interesting discovery that the bacillus of swine erysipelas was present in twenty-eight out of thirty-eight cases of verrucous endocarditis. Further inquiry did not lead the committee to conclude that the frequently encountered cases with chronic heart disease represented pigs that had survived an acute attack during an outbreak of the disease; and attempts to infect healthy pigs by feeding them with blood or cardiac vegetations containing the bacilli, or with artificial cultures, gave in every case negative results, though the bacilli were virulent to mice and pigeons.

THE HERMITE PROCESS AT BOMBAY.

THE Hermite process, which consists of the use of electrolysed sea-water for the deodorising and sterilising of sewage, and which was reported upon by THE LANCET Special Analytical Sanitary Commission on the Hermite Process of Sewage Treatment by Electricity,[1] has already been tried in Worthing, Netley Hospital, Havre, and elsewhere, and is now about to be adopted at Bombay. The plant has been erected at Carnac Bridge and an agent has arrived to superintend the experiment. The Hermite system is, we should imagine, specially adapted to a city like Bombay, where the sewers are defective and the sewage can be run into the sea.

THE SURREY COUNTY HOSPITAL AND HOME VISITS.

THERE has lately been much discussion in Guildford as to the visiting by members of the Surrey County Hospital staff of sick persons, patients of the hospital, at their own homes. A scheme has been considered by which the hospital authorities are to work with the townsmen who are promoting the Jubilee commemorations, and the townsmen offer £50 annually to the hospital if 200 tickets for home visits are supplied and an out-patient letter given with each. The chief opposer of the scheme argued that it would fall through by the introduction of out-patient tickets, that £50 for 200 tickets was a most inadequate sum, that the country subscribers would say that the town of Guildford obtained too much advantage, that it was the duty of the committee to oppose a scheme which would tend to pauperise a portion of Guildford, and that the home visits were likely to introduce infection into the hospital. The hospital committee are greatly in favour of the scheme being adopted. With regard to the objections given above we agree with them all except the last. Unless the staff of the hospital are to be debarred from all private practice, we do not see why the visiting of a poor patient should be more likely to introduce infection than a visit to a patient who is better off. Disease is no respecter of persons, station, or wealth, and a medical man is as little likely to carry infection from a hovel as from a palace. As to the practice of hospital staffs visiting hospital patients at their own homes, it is one of which we do not approve; hospital patients when they are discharged from the wards should cease to be hospital patients other than as out-patients.

THE ELECTRO-CAUTERY AS A HÆMOSTATIC.

A HÆMOSTATIC application of the electro-cautery is reported by Dr. Alexander J. C. Skene in the *New York Medical Journal* of March 27th. This consists in its employment instead of the ordinary torsion artery forceps and the compression forceps. In the case of the artery forceps a thin platinum plate is attached to the distal extremity of either blade, but isolated from it by a sheet of mica. The proximal ends of the plates are attached to copper wires, also isolated, which pass along the proximal end of the forceps

[1] THE LANCET, May 26th, 1894.

through a vulcanite case and communicate with a battery. It is sufficient, says Dr. Skene, that one blade only be thus electrically fortified. In the case of the compression instrument a modification of the original plan is introduced, a platinum wire passing inside a flat watertight metal chamber applied along the inner side of one blade to the distal end of the instrument, where it is attached to a platinum plate. It is, of course, isolated. At its proximal end it is connected with a copper wire which traverses a vulcanite case and passes, together with a wire attached to the handle of the forceps, to the battery, as in the artery forceps. In order to develop sufficient electrical resistance the platinum wire in the metal chamber is made to take a zigzag course. Dr. Skene has also devised a clamp with the electrical modification. He states that by this means the required degree of heat—170° to 190° F.—can be attained very quickly, and that the apparatus can be easily adapted either to a suitable battery or to the current from the electric light mains. He has made use of his invention in treating the pedicle in ovariotomy, in operations on the broad ligament of the uterus, and in vaginal hysterectomy. As yet he has not employed it in abdominal hysterectomy, but he is confident that it is suitable for this operation also.

THE SUPPLY OF STIMULANTS AT THE GAOL HOSPITALS IN NEW SOUTH WALES.

EARLY in 1895 the Comptroller-General of Prisons brought under notice the extravagant use of stimulants in the hospital of one of the large gaols, and a report was obtained from the then Government medical officer on the subject. It was recommended that white spirit, diluted to 40°, should alone be furnished in response to requisitions for alcohol. This recommendation was approved. Two visiting surgeons to gaols—Mr. Carruthers and Mr. O'Connor—have recently objected to using this white spirit, and wish to be allowed to use their discretion as to what form of stimulants should be ordered, and Dr. Ashburton Thompson, the Government medical officer, has sent in a further report on the subject. He had the brandy previously supplied under contract to the gaols analysed, and found that it was composed almost entirely of the "white spirit" to which objection was taken, coloured and flavoured. It was not brandy from the grape, but a spirit of less certain wholesomeness than that to which Mr. Carruthers and Mr. O'Connor objected. He adds that everyone interested in the matter knows that the spirits of commerce very seldom have the origin their names specify, and the compound in question is everywhere accepted in the course of ordinary business as "brandy." As the complaint was that the medical officers were compelled to give up the contract article, now shown to be a more or less impure "white spirit," Dr. Thompson says, "nothing remains to be considered." Whether everyone will agree with him in this opinion is another matter.

POISONOUS ICE CREAMS.

EVIDENCE comes almost day by day, at any rate in the summer season, of the desirability of placing the manufacture of ice creams under definite control. There is no reason why an inspector should not be appointed to seize any materials intended for the preparation of ice cream that prove to be unfit for food, just in the same way as meat or any other article which is in an unwholesome state may be seized. As was shown in the report of THE LANCET Commission on the Sanitary Condition of the Italian Quarter as far back as Oct. 18th, 1879, the surroundings under which cheap ice creams are very commonly made are often loathsome in the extreme, and it is not surprising that recent bacteriological inquiry has demonstrated the presence in them of the organism that is a normal inhabitant of the human bowel, and it is well to bear in mind that any objectionable taste that the ingredients may have is not noticeable owing to the numbing effect of cold upon the tongue. Only this week an inquiry was held touching the death of a child, aged fourteen years, who, four days after partaking of some ice cream obtained from a barrow in the street, died from ptomaine poisoning. The post-mortem examination showed that all the organs were healthy except the stomach, which was greatly congested, evidently by the action of an irritant poison. A verdict of accidental death was returned. There is little doubt that the ptomaines were derived from bad eggs or perhaps highly decomposed milk. Seeing the great number of innocent juvenile partakers who are to be found round the barrows almost every day, it is high time that ice creams and the ingredients employed in their manufacture should be subjected to the same control as are unsound meat, fruit, and tinned and other articles of food.

THE LATE MR. JAMES BLAKE BAILEY.

IT is with great regret that we announce the death of Mr. J. B. Bailey, the Librarian of the Royal College of Surgeons of England. Mr. Bailey, who was in his forty-ninth year, had for some time been suffering from symptoms of malignant disease of the liver, and no hope of his recovery had been entertained for the past few weeks. He had held the post of Librarian to the College for the period of ten years, and previously to accepting that appointment had been the Librarian to the Royal Medical and Chirurgical Society since 1884. Before this date he had held the office of Librarian of the Radcliffe Library at Oxford under Sir Henry Acland. Mr. Bailey's loss will be very much felt by all who have ever come into contact with him. He was an admirable man for his post, always able and willing to give information, and devoting his whole time to his books. He was never tired of hunting among the archives of the College, and brought to light many a forgotten pamphlet or book of interest, which he sometimes republished and illustrated with notes that showed a keen critical and literary insight. His latest publication was the interesting little book, "The Diary of a Resurrectionist."

THE MICROBE OF CHICKEN CHOLERA.

THE invasion of the various colonies of Australia by rabbits is one of the most serious difficulties with which agriculturists have to contend, and numerous attempts have been made to get rid of these animals by trapping, by a "poll-tax," by phosphorus poisoning and in various other ways. Some time ago it was suggested that Pasteur's fowl cholera organism or Koch's rabbit septicæmia organism should be introduced into the colonies with the object of killing off the rabbits by a kind of artificial epidemic. It was objected, however, that the introduction of this organism might do more harm than good by killing all the poultry and perhaps not getting rid of the rabbits. Mr. C. J. Pound, Government Bacteriologist to the Colony of Queensland, now states in a report presented to the Houses of Parliament of the colony that fowl cholera is already present in the colony. This being the case he has taken the opportunity of carrying on a series of experiments with the fowl cholera organism, as a result of which he is convinced that by the judicious use of food mixed with this organism in dry weather he will be able to set up an epidemic amongst rabbits, even those in a wild state, which would in time mitigate to a very marked degree this rabbit plague, and he recommends his Government to give permission to agriculturists to use this organism as a rabbit poison. Whether this can be carried out on a large scale, and whether it would be successful if carried out, still remains to be proved; but from all accounts the

rabbit nuisance has reached such proportions that any method of keeping down these "vermin" will probably be tried in Queensland; whilst, should it prove successful, it will be hailed with almost as much delight as that with which Koch's method for treating rinderpest has been received by the South Africans.

LONDON POST-GRADUATE COURSE.

ON Monday, May 3rd, the summer term will commence, and will include courses at Blackfriars (Skin), King's College (Bacteriology), London Throat Hospital, Parkes Museum, Institute of Preventive Medicine (Urine Testing), and Cleveland-street Infirmary (General Medicine and Surgery). All information will be afforded and fees received by Dr. Fletcher Little, secretary, 32, Harley-street, London, W.

THE ROYAL COMMISSION ON TUBERCULOSIS.

WE understand that the Royal Commission on Tuberculosis has been much impressed with the general concurrence amongst the witnesses who have been heard as to the necessity of establishing public abattoirs wherever this is possible, both in the interest of the public health and to protect graziers and butchers against the present want of uniformity in the seizure of carcasses on account of tuberculosis. Several members of the Royal Commission have, therefore, commenced a tour of inspection of foreign cities to study this question and to learn generally what action is taken abroad both as to tuberculous carcasses and tuberculous milch cows. The first cities to be visited are Brussels, Cologne, Berlin, and Leipzig. Other visits will probably follow later.

THE MUZZLING ORDER.

AN impassioned correspondence has been going on in the daily press about the recent muzzling order and the Board of Agriculture has been assailed with a virulence which certainly seems excessive when we remember what slight cause it has given for such abuse. On one point we can agree with the objectors to the order, and that is we consider that the muzzling order ought to have been made universal throughout the kingdom, and that on the expiration of the appointed period a strict system of identification of dogs and their owners should be inaugurated by means of registration and the wearing of a marked collar by the dog. But in most ways many dog-owners seem to have completely lost their heads and to have imported political bias into the question, which is quite beside the mark. Anyone who is so foolish as to say that a Government or a candidate will lose his vote on account of this order is quite unfit to exercise the franchise at all. If these silly persons had ever seen a case of hydrophobia they would think no means too stringent to stamp out such a fearful disease, although we quite agree that the present methods of procedure are inadequate.

MORTALITY STATISTICS AMONG FOREIGNERS IN SHANGHAI.

THE annual report of Dr. J. Taylor Grant, municipal surgeon and medical officer of health, shows that during the year 1896 there were 141 deaths of foreigners registered in Shanghai, including 4 adults whose bodies were brought to Shanghai for burial and 2 stillborn infants. Taking the whole foreign population, resident and non-resident, including the French Concession and the foreign shipping, this gives an annual death-rate of 22 per 1000, as compared with 23·5 in the previous two years and 18·4 in 1893. Of these deaths, 19 were due to small-pox, 14 to tuberculosis, 12 to drowning, 10 to cholera, 10 to enteric fever, 1 to cholera morbus, and 2 to opium poisoning. As far as can be gathered from the native returns, only 18 deaths of natives were due to cholera during the past year, as compared with 928 in 1895. Among the natives 316 deaths are certified as due to small-pox. In the native hospitals vaccination is performed regularly twice a week by the native practitioners, whose returns show that the natives in and around Shanghai appreciate it more each year, and that 7160 vaccinations were performed in the city alone during 1896. Preparations were made against a threatened invasion of plague, but the disease did not spread to Shanghai. During September and October dengue prevailed extensively throughout the Settlement. This specific eruptive disease attacked alike foreigners and natives, adults and children, but in no case among foreigners was there a fatal termination.

OYSTERS AND DISEASE.

AT their meeting on Thursday, April 15th, the Brighton Corporation drafted the petition which they intend to send to the Local Government Board asking for a Bill to control the dissemination of oysters and other shell-fish proved to be contaminated by sewage. The support of other municipalities is to be sought in the matter. Speaking first of the "increasing bulk of evidence" that enteric fever is communicated from this source, the memorial goes on to say that certain of the memorialists have had within their districts cases traced to this cause. The report of Dr. Bulstrode, it is claimed, proves the danger and the need of remedial measures. It is suggested that these latter should include the giving of powers to local authorities similar to those of Section 4 of the Infectious Diseases Prevention Act, 1890, in the case of milk—i.e., to prohibit the supply within their district of any shell-fish from any water proved to the local authority to be contaminated by sewage, the consumption of such shell-fish being proved to be, or being likely to be, dangerous. An appeal to the Local Government Board from the local authority is suggested. Further, they ask that power to totally close oyster-beds or ponds on the representation of the local authority shall be vested in the Local Government Board.

THE Order of the Double Dragon has been conferred by the Emperor of China on four of the surgeons who took part in Red Cross hospital work during the Chino-Japanese war. The names of the recipients of the honour are—Thomas Brander, M.B., C.M. Edin., Dugald Christie, L.R.C.S., L.R.C.P. Edin., Charles De B. Daly, M.B., M.Ch. Dub., and D. C. Gray, M.B., C.M. Glasg.

THE East London Hospital for Children, Shadwell, has now been recognised by the Conjoint Board for England as a place of instruction for students, at which six months of their fifth year under the new regulations may be spent in clinical work. Full information on all points may be obtained from the secretary at the hospital.

THE annual dinner of the Army Medical Staff will be held this year in the Whitehall Rooms, Hôtel Métropole, at 7.45 P.M., on Monday, June 14th, the Director-General in the chair, and it is hoped that the Army Medical Staff band from Aldershot will play during dinner.

WE understand that Mr. Bennett May, Professor of Surgery in Mason College, Birmingham, is an intending candidate for the vacancy on the Council of the Roya College of Surgeons of England caused by the death of Mr. Oliver Pemberton.

THE Prince of Wales will open the new buildings of the Sarah Acland Home for Nurses at Oxford on May 12th.

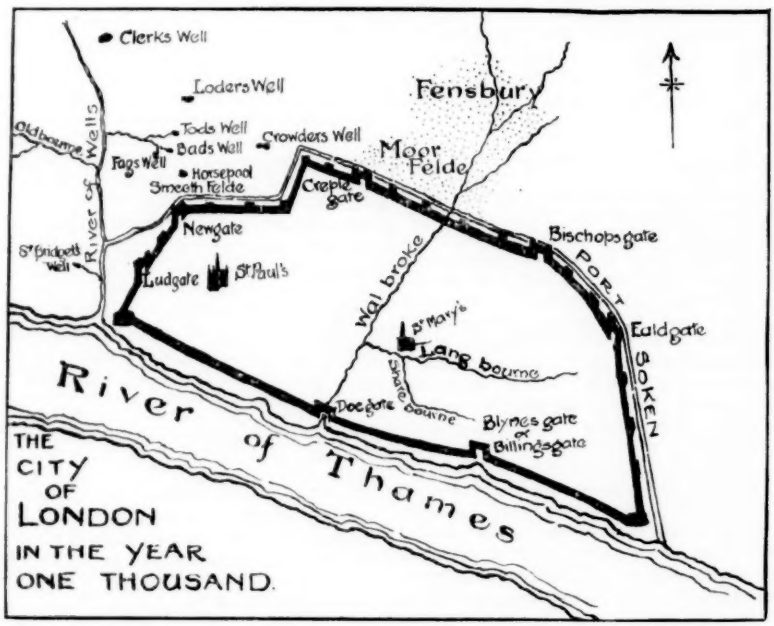
The Lancet Special Commission
ON THE
METROPOLITAN WATER-SUPPLY.

IX.[1]

Historical.

BEFORE describing the three companies which still remain to be reported upon it will be convenient to give a few more details of the past history of the water-supply of London, a partial *résumé* of which has already been given.[2]

In the early period of its history London, as we have seen, was supplied by water from the River Thames, from streams which ran through the city and from a number of wells. The accompanying map is reproduced from one in the Grace collection now in the Print Room at the British Museum. It shows the probable position of the wells and streams in and near the City of London in the year 1000. Stow says that at one time Walbrook was "a fair brook of sweet water, which came from out the north fields through the wall and midst of the city into the River of Thames, and which division is till this day constantly and without change maintained."



There was, says Stow, "a long bourne of sweet water, which of old time, breaking out into Fenchurch-street, ran down the same street and Lombard-street to the west end of St. Mary Woolnoth's Church." This was the Langbourn, and there is no doubt as to the course of this stream, which is correctly given in the map. As to the Shareborne, it seems by no means certain that the map is correct. Stow says that from the west end of St. Mary's Church the Langbourne, "turning south and breaking into small *shares*, rills, or streams," gave the name to Shareborne-lane. The site of Crowder's Well is now Well-street, Jewin-street. At the early part of the eighteenth century the water of this well was, according to Strype, "esteemed very good for sore eyes to wash them with. ..... And some say it is very good for men in drink to take of this water, for it will allay the fumes and bring them to be sober."

River pollution.—The pollution to which the streams were subject gave rise at quite an early period to complaints, and river pollution was an object of legislation in the Parliament which met at Carlisle in the twenty-fifth year of the reign of Edward I. The Earl of Lincoln complained that the pollution of the Old Bourne had become unendurable in consequence of the filth from the tanneries situated on the banks of the stream. The citizens were ordered to cleanse the river. The people who in early times made a trade of getting water from the river had not always a very easy task in consequence of the condition of the banks. There is a case recorded in which one of these people was drowned in trying to land. The report of the inquest is in the City archives.

Supply to the religious houses.—Before leaving the early history of the London water-supply it may be worth while to mention that the religious houses had, in most cases at any rate, an independent and good water-supply. St. Peter's Abbey at Westminster was supplied by water from Hyde Park and the Charterhouse by water derived from Islington. The Priory of St. Bartholomew's had also a good water-supply. The destruction which occurred at the Reformation and the breaking up of the religious houses interfered for a time with some of the purest sources of supply.

The earliest water businesses.—The first time in the history of London in which the supply of water became a considerable business was undertaken by Moris, and to this reference has already been made.[3] The other early water businesses which were started for the supply of places north of the Thames were the New River, the York Stairs, and two smaller ones in the East-end. Of these the New River Company is the only one which still exists in recognisable form, and we propose going into its history later. The East-end businesses are now represented by the East London Waterworks, in connexion with which their story will be told, and we need here only say a few words as to the London Bridge and the York Buildings Waterworks.

The London Bridge Waterworks.—Little need be added to the history already given of the early career of the London Bridge Works. Every drawing of Old London Bridge shows the water-wheels, and the *Philosophical Magazine* gives an

[1] Nos. I., II., III., IV., V., VI., VII., and VIII. were published in THE LANCET of Feb 20th and 27th, March 6th, 13th, 20th, and 27th, April 3rd and 17th, 1897, respectively.

[2] THE LANCET, Feb. 20th, 1897.

[3] THE LANCET, Feb. 20th, 1897, p. 541.

account of the pumps. We cannot do more here than give dates at which the arches of the bridge were given up to the business[4] and pass on to describe the state of the undertaking at the early part of the present century. The quantity of water supplied by the London Bridge Company in 1810 was estimated at something between 3,000,000 and 4,000 000 gallons daily, and the water-wheels worked about twenty hours each day. When the tide was very low less water was raised by the wheels and the quantity was made up by working a steam engine. The superintendent of the Company gave a somewhat depressing account of the business in the year 1821. They had at that time a very "strong enemy" against them, which had taken away many of their customers. "They were in a state of pauperism and much to be pitied." The strong enemy was the New River Company, which had the power of raising water higher than the London Bridge Company could possibly do. The new fashion of building high houses was disastrous to the Company, because cisterns and water-closets were placed at an unreasonable distance above the ground in the new buildings. The pipes used by the Company were made of wood, and they had not enough money to replace them by iron ones. They were unable to supply water at a higher level than the second storey of a house. The superintendent of the Company would not admit that the water supplied was of a bad quality, and he said that in many instances distillers took it in preference to any other, but he admitted he never thought of drinking it. The ebb tides brought down a considerable quantity of soil from the rivers which ran into the Thames and the water was frequently foul, but after it had stood in a cistern for twenty-four hours it became "finer than any other water that could be produced." For his own supply the superintendent had two large cisterns, and by drawing out the water alternately every other day he had "as clear water as could be imagined." The rates charged for supplying the tenants of the London Bridge Waterworks varied according to the amount supplied, from a minimum of less than £1 to a maximum of over £20 per annum. The total number of customers was a little over 10,000, and sixty-eight public buildings were supplied. The method of arranging as to the price charged to customers was that the surveyor first examined the premises closely and reported to the superintendent what he thought the consumption was likely to be and the size of the service pipe. A price was then fixed, and if in the course of time it was found that the consumption was more or less than had been estimated, an abatement or increase in the sum charged was made, according to the circumstances of the case. Brewers, stable-keepers, and some other tradesmen were subject to an extra charge. The amount of water considered necessary for a daily supply to a house was one butt, and any quantity above that was considered an "extra service."

With regard to the ultimate failure of the London Bridge Waterworks it may be said to have been chiefly due to the fact that the New River Company were able to supply water at a higher pressure, which enabled them to force it to the upper storeys of the London houses. The London Bridge Waterworks were destroyed on the demolition of Old London Bridge.

The York Buildings Waterworks.—In the reign of Charles II. a patent was granted to allow waterworks to be made to supply the West-end of London with water from the Thames. The undertaking was called the "York Waterworks," and the premises used occupied part of the site of old York House. The original works were destroyed by fire in the year 1690. In 1691 an Act of Parliament was obtained by which the proprietors of the York Waterworks were incorporated under the style and title of the "Governor and Company of Undertakers for raising the Thames water in York Buildings." In the early part of the eighteenth century the company did not confine the business to water; they speculated largely in land. A number of forfeited estates which had belonged to Scottish Jacobites were bought up at a cheap rate, with the immediate result that there was an enormous increase in the market value of the shares (£10 shares became worth £305) The works were situated at the bottom of Villiers-street, under which the chief reservoir extended. Water was supplied to Piccadilly, Whitehall, and Covent-garden, and the intervening streets. The number of tenants supplied by the York Buildings Company was just over 2000 in 1804; in 1814 it was 2740, and in 1818 2636. It was perhaps rather unfortunate for this Company that there was a fire in the district supplied by them at a time when they were unable to supply water because their own boiler had burst. The fire proved fatal to two or three people, and the fact that there was no water-supply to quench it appears to have made the Company somewhat unpopular. The Company was finally ruined by the competition of the newer companies. Some of the tenants went to the New River Company, some to Chelsea, and some were supplied by the Grand Junction Company. The York Buildings Company ceased to exist in 1818. They leased their pipes to the New River Company and sold their business for a fixed annual consideration. Before that time the Company had been losing money in accordance with the prophecy of a financial poet:—

> "You that are blest with wealth by your Creator,
> And want to drown your money in Thames Water,
> Buy but York Buildings, and the cistern there
> Will sink more pence than any fool can spare."

[4] The lease of the first arch of London Bridge was granted by the Lord Mayor and Commonalty in the year 1581 for a period of 500 years. In 1583 the second arch was granted for a period of 500 years from that date, and a lease of the fourth arch was given in 1701 for a period of 381 years. In 1761 the third arch from the north was granted for a period of 321 years; and, finally, in 1767, the fifth arch from the north end and the second arch from the south end were let on lease to the company for 315 years. The arch on the south side of the bridge was used for putting up a pump for the supply of Southwark.

ANNUAL REPORT OF THE SANITARY COMMISSIONER OF THE GOVERNMENT OF INDIA FOR 1895.

[FIRST NOTICE.]

THESE reports always afford much excellent reading in the way of information derived from various sources—Continental and British—bearing upon the etiology and pathology of disease, in addition to furnishing a public health record of the military and native populations of India. It is to be regretted that their publication has to be delayed until the facts which they chronicle are no longer fresh, but have been supplanted by other and more recent occurrences. It cannot, we presume, be otherwise in regard to official documents, the value of which mainly consists in their accuracy, and which are based upon information and tables derived from various centres. India has, as we know, been passing through a most serious ordeal of late; plague, pestilence, and famine have altogether absorbed public attention and for a while obliterated other and lesser evils from consideration. But there is a great deal of very interesting material in these annual records. The report for 1895 is less voluminous than its predecessors. Acting in accordance with the instructions and suggestions of the Army Sanitary Commission the tables appear in a new and simpler form; they have been reduced exactly by one half, and yet, owing to a process of re-casting and re-arrangement, nothing of importance has, we are told, been omitted; on the contrary, a considerable amount of fresh information has been furnished.

The changes introduced in this respect are numerous and in our opinion an improvement. Among them we may mention that information regarding the distribution of some entozoa is given for the first time, a column has been added to Table XIV. (an important table) showing the number of men added to each regiment by arrivals in India during the year. This is of importance, because, though a regiment may have been a certain number of years in India or at any particular station, yet the actual men in the regiment do not remain the same. A new feature also is the inclusion in one of the tables dealing with European troops of the constantly sick from each disease.

The health of the European army in India, so far as the admission and death-rates are concerned, was better in 1895 than in the preceding year. The chief causes of admission were venereal disease and ague; the former caused 36 per cent. and the latter 23 per cent. of the total sickness. The chief causes of mortality were enteric fever (which caused 44 per cent. of the total deaths), hepatic abscess, and dysentery. Contrasting the past and present mortality of European soldiers in India, reference is made to a statement that the ratio for the period from 1800 to 1830 was 84·60 per 1000; from 1830 to 1856, 56·70; from

1869 to 1878, 19·30; from 1879 to 1888, 16·02; and the ratio for the period from 1889 to 1894 was 15·91 per 1000. These figures serve to show very satisfactorily the progressive decrease which has been taking place in the mortality of the European army serving in India. The subject is pursued somewhat further and somewhat more in detail in the Sanitary Commissioner's report in connexion with the mortality from certain diseases for India as a whole from 1870 to 1895 and for the Bengal Presidency from 1858 to 1894, the last year in which this Presidency existed as a separate command. Some of the facts and statistical data are interesting. The earliest year for which statistics are available for India as a whole is 1870. In that year the short service system was inaugurated in England and is presumed to have begun to affect India seriously from 1877. There are no records of enteric fever in the Sanitary Commissioner's office before 1870, although it appears from 1861 onwards in the Army medical blue books. There can be no doubt, however, about the previous existence of the disease in India, but it was returned under the head of other fevers. The increase of enteric fever and venereal disease in India is largely associated with the short service system. Those of our readers who are interested in the subject of the past and present history of disease in India must refer to the tables in the report for themselves; we may content ourselves with merely recapitulating some of the points and quoting the following remarks:—

"The increase in ague may be due to exposure on active service and to the addition to the empire of large malarious regions on the north-western and eastern frontiers. The increase in mortality from respiratory diseases is partly certainly due to the epidemic of influenza, which has not left the country since it first appeared in 1890. The decrease in cholera, scurvy, and some other diseases may be put down to improved hygiene. The decrease in remittent and simple continued fever is probably mostly due to change in diagnosis and transfer to the head of enteric fever. Hepatitis was shown by Dr. Bryden to be a disease of degeneration, a disease of the old soldier. Its diminution appears, therefore, to be a good result of the short service system."

Passing over the subjects of influenza, cholera, small-pox, and the various forms of malarial and the simpler kinds of heat fever among the British troops for 1895 we come to that scourge of the young soldier and officer serving in India—enteric fever. The remarks on this subject, the references to its literature, and the results of bacteriological researches in the report under review are very full and worth reading. We are told that "increased experience has not, on the whole, made the bacteriological investigation of diseases easier. The progress of knowledge has revealed how little is known, the characters of many bacteria do not appear so sharply defined as at first, and identification has become a complicated and laborious process." There is no need to discuss the relation of the prevalence of this disease to the susceptibility of the material supplied to India under the short service system, because that is a matter which has already been threshed out, and occupies an accepted and stereotyped position in official reports from India. It does not, after all, carry us very far. What we want to know is something more precise about its assigned cause, how to detect the typhoid fever bacillus, its life-history, the channels by which it effects its entrance into the body, and the way to prevent it doing so. If we may judge from statistical data and making every allowance for differences attributable to an improved diagnosis we are, notwithstanding all our efforts, still far from having attained success in devising practical measures for preventing or limiting its spread. There are too many subjects in the Sanitary Commissioner's report to be dealt with, even cursorily, in the limits of a single notice, and we must therefore defer our remaining remarks.

NEW SANITARY BY-LAWS FOR LONDON.

UNDER date Dec. 15th, 1896, the London County Council, under the Metropolis Management Act, 1855, are proposing to issue some new sanitary by-laws. In a laudable endeavour to add, if possible, to the utility of what promises to be a very valuable addition to the cause of sanitation in the metropolitan area, Dr. James Edmunds, medical officer of health for the Vestry of St. James, Westminster, and Mr. Henry Monson, the vestry surveyor, have issued a report to their vestry, which was approved and adopted on Feb. 26th, 1897, and printed. Their example might well, and doubtless has been, followed by other vestry officers, as criticisms from such sources, whether accepted or not, cannot but be of value to those who have the responsibility of framing such by-laws and who have the welfare of the public at heart.

The following is a brief outline of the intended by-laws, with the aforesaid criticisms in a condensed form, together with a few of our own comments upon each. The agreement between the mode of procedure advocated by THE LANCET Special Commission on the Relative Efficiency and Cost of Plumbers' Work[1] and the proposed new by-laws is very noticeable.

SUMMARY OF PROPOSED BY-LAWS.

By-law 1 deals with the trapping of subsoil drains ultimately communicating with a sewer, and proposes to ventilate their disconnecting traps only.

By-law 2, paragraph 1, treats of the disconnexion over gulleys of all rain-water pipes; and paragraph 2 directs that these rain-water pipes are to be exclusively used for the passage of rain-water.

By-law 3, paragraph 1, regulates the nature and construction of all soil drains communicating with a sewer; paragraph 2 relates to their thickness and weight in relation to their diameter; paragraph 3 determines the size of and the manner of laying them, the jointing, &c., also as to testing with water; paragraph 4 declares that no drain shall pass under any building unless any other mode of construction is impracticable; paragraph 5 prescribes for the laying of any drain which shall pass under a building, the same to be laid in a direct line and embedded in and covered with concrete; paragraph 6 defines the composition of the concrete to be used; paragraph 7 provides as to the treatment of iron drains fixed above the surface of the ground; paragraph 8 refers to access to drains passing under a building; paragraph 9 decides as to the trapping of all inlets to a drain other than ventilating pipes, and prohibits the use of bell-traps, dip-traps, and D-traps; and paragraph 10 indicates how drains passing under any wall are to be protected.

By-law 4 insists upon the provision of and fixes the position for, and also the means of access to, the disconnecting traps in main drains.

By-law 5 disallows the use of any right-angled junctions in any drain.

By-law 6 assigns the means to be used for the efficient ventilation of the drains communicating with a sewer. Paragraph 1 ordains that two untrapped openings be provided in one or other alternative ways: (*a*) requires that an opening near the level of the ground be placed as close as convenient to the disconnecting trap on the house side as a fresh-air inlet, and describes how a ventilating pipe is to be carried up from the drain at a point as distant as possible from the first opening to a suitable height above the roof; and (*b*) defines that where this is impracticable inlet and outlet pipes in the reverse position to the last are to be adopted as an alternative. Paragraph 2 provides that a suitable grating or cover shall be fixed to these ventilating pipes, the openings in which shall equal the sectional area of the drain. Paragraph 3 settles that these ventilating pipes shall be of a sectional area not less than the drain with which they communicate. Paragraph 4 forbids the use of any bends or angles in these pipes unless unavoidable; and paragraph 5 allows the use of soil pipes or wastes of slop sinks as ventilators in place of the foregoing (By-law 6, paragraphs 1 and 2), provided they conform in all respects with the provisions already laid down and are of an internal diameter of not less than 3½ in., which shall be deemed sufficient for a 4 in. drain.

By-law 7.—Paragraph 1 prohibits the construction of any inlet to a drain within a building other than from a watercloset or slop-sink; paragraph 2 demands that all bath, sink, and lavatory wastes be suitably trapped immediately underneath and continued so as to discharge in the open air into or over a gulley, and if necessary be provided with an anti-syphonage pipe; and paragraph 3 points out that all safe-wastes and overflows of cisterns must deliver into the open air.

By-law 8.—Paragraph 1 deals with the soil-pipes both of new and old buildings. It reads: "Any person who shall provide a soil-pipe in connexion with a new building, or shall construct or refit a soil-pipe in connexion with an existing building," and directs that they shall be fixed outside if possible, and that they shall be of drawn lead if inside, adding directions as to joints and construction, and that the connexion with drain be made by means of a brass thimble. Paragraph 2 deals with the sizes, weight, and thickness of soil-pipes; paragraph 3 states that no rain-water-pipe shall be directly connected with the soil-pipe of any watercloset, and that no soil-pipe shall have a trap between it and the drain; paragraph 4 provides that they be not less than 3½ in. in diameter and be fixed free from bends if possible, and that they be open at the top, with a safe outlet for foul air; paragraphs 5, 6, 7, and 8 relate to various connexions between the several kinds of drains and soil pipes; and paragraph 9 stipulates as to the connexions of various kinds of closet traps and soil-pipes.

By-law 9 describes the anti-syphonage pipes for watercloset traps.

By-law 10, paragraph 1, provides for the proper trapping of slop sinks and prohibits the use of D-traps; and paragraph 2 treats of the size and weight of slop sink wastes, which wastes are not to be less than 3 in. in diameter and are to be provided with anti-syphonage pipes.

By-law 11 declares that the owner of any building shall maintain all pipes and drains in a proper state of repair.

By-law 12 decrees certain penalties for infringement of these by-laws.

By-law 13 is as follows: "These by-laws shall, so far as practicable, apply to any person who shall construct any pipe or drain or other means of communicating with sewers, or any trap or apparatus connected therewith, so far as he shall effect any such works in any building erected before the confirmation of these by-laws as if the same were being constructed in a building newly erected."

[1] The Report can be obtained from THE LANCET Office, 423, Strand, price 6*d*.

SUMMARY OF THE REPORT TO THE VESTRY OF ST. JAMES, WESTMINSTER, BY DR. EDMUNDS AND MR. MONSON, WITH OUR COMMENTARIES THEREON.

Dr. Edmunds and Mr. Monson report (*a*) that portions of the proposed by-laws are prolix and obscurely worded; (*b*) that some of the provisions are ambiguous and unintelligible; (*c*) that some of the requirements are unnecessary and oppressive; and (*d*) that in some points the requirements are inadequate. They also point out the importance of greater clearness and conciseness, and recommend that they be reconsidered, seeing that £40,000,000 sterling is the annual value of the rateable property affected by them.

In reviewing this criticism in detail, the suggestion (*a*) as to greater brevity and clearness is in several instances certainly very desirable. The objection (*b*) is also applicable to By-laws 8 and 13, where reference is made to other than new buildings. The next objection (*c*) is more open to question, as by a little less ambiguity in By-laws 8 and 13 many possible objections would be removed. Several of the by-laws, in every way desirable and reasonable when applied to new buildings, would possibly prove arbitrary and vexatious if enforced in an old one. Whether the term "so far as practicable" in By-law 13 is intended to leave some amount of discretionary power in the hands of local authorities is not quite clear; at all events, it should do so. It should not, however, be overlooked, that with any law made to benefit the many, it must happen that it will press heavily upon a few in some instances. Regarding objection (*d*) the suggestions given are: (1) That a by-law is required regulating traps; (2) that urinals should be assimilated to watercloseta and slop sinks; (3) that all cast-iron pipes for drains should be packed with yarn, jointed with molten lead, and properly caulked, also that old drains and filthy earth should be removed; (4) that drainage plans should be deposited by builders with the local authorities under penalty for neglect or falsification; and (5) that builders should fill drains with water and demonstrate the action of the drains under the direction of vestry officials when required. This last may be open to question.

To these might well be added:—(1) A specification of the number of tacks to be used on a soil pipe (an insufficient number is very frequently the cause of a fracture), say 6.8 lbs. cast lead tacks to each 10 ft. length; (2) that all bath or lavatory wastes being longer than 10 ft. should, in addition to the anti-syphonage pipe, be carried up to some convenient spot and left open at the top to ensure a free current of air through same; (3) that By-law 1 be made to include further provision as to ventilation—the subsoil drain under a house should at least be as well off in this respect as the soil drain that has to have sealed joints and is covered with concrete, seeing that they both communicate with a sewer, and with this drain there is the extra risk of the water in the trap becoming saturated with sewer air in dry weather.

By-law 1 has escaped criticism, though it would seem to be an elementary principle that an open-jointed drain passing under a house and ultimately connected with a sewer should not only be ventilated at the trap near the sewer, but that the extreme ends should be brought up just above the ground level and be left open to admit of a free current of air through them; also, instead of an air shaft by the trap, they should discharge over a gulley in an open area, if only as large as an ordinary manhole.

By-law 2, paragraph 2, regarding the exclusion of bath and sink or lavatory waste from rain-water heads, is considered by Dr. Edmunds and Mr. Monson as likely to be oppressive and unnecessary. Is not this criticism somewhat strained? The use of a large rain-water pipe for this purpose is often very objectionable, and with new buildings the use of any need not be necessary.

Regarding By-law 3, paragraph 1, exception is taken to the use of the word "communicating," which it is held is used in this and in By-laws 1 and 6 in varying senses. This criticism is difficult to follow. There is a great distinction to be drawn between communicating ultimately with a sewer and directly communicating. Is not this question rather of an academical than of a practical nature? The criticism of paragraph 3 defines more fully the composition of and the manner of forming the concrete bed, and these suggestions might be adopted with advantage. In criticising paragraphs 4 and 5 the report points out the difficulty frequently existing to the construction of a drain outside a building; though such a course may be possible, and suggests that this should be left optional to the local authorities. It also adds that in some buildings it is impossible to lay a drain in a direct line. The answer to this criticism is that in new buildings there should be no difficulty, if By-law 13 is rendered clear as to the meaning of the words "so far as practicable," there would be no difficulty in the case of old buildings either. The criticism of paragraph 9 suggests the substitution of the word "Mason's trap" for that of "dip-trap," on the grounds that the latter is ambiguous. This alteration would certainly improve the clause if Mason's trap is the one intended.

The criticism to By-law 5 proposes the addition that all branch drains should be provided with proper means of access.

In criticising By-law 6, paragraph 2, Dr. Edmunds and Mr. Monson propose that air inlets should be fitted with mica or other approved valves to prevent the reflux of air from the drain, and that the grating should stand vertical. Mica valves to fresh air inlets are a delusion and a snare. In a properly laid and ventilated drain foul air should be comparatively non-existent, and the small amount likely to issue from the air inlet, considering the situation, need not be thought of. Mica valves often become choked with dirt after a short time and are then worse than useless. The grating suggested should certainly stand vertically. In paragraph 3 they remark that the term "communicates" is here used obscurely, and question if it is intended where a 9 in. drain is used that a 9 in. ventilating pipe is to be used also. This criticism should undoubtedly be followed and the sense in which the word "communicate" is used made clear. The presumption is that it refers to the usual short branch drain with which the ventilating shaft is commonly connected. This view is corroborated by the reference to the use of the soil-pipe for this purpose in paragraph 5. Apart from the absurdity of a 9 in. ventilating pipe, it is difficult to imagine anyone using a 9 in. drain under these by-laws.

The criticism of By-law 7, paragraph 1, demurs to the prohibition of inlets to a drain within a building other than from a watercloset or slop sink, on the ground that in urban districts often the whole ground is covered. To this criticism it may be pointed out that with new buildings there can be no difficulty. For old ones provision is made in By-law 13. Gulleys in buildings frequently remain uncharged and manhole covers become loose with traffic.

The criticism of paragraph 2 of the same by-law is directed against the compulsory trapping of bath, lavatory, and sink wastes, and their being compelled to discharge over gulleys instead of rain-water heads and to the addition of anti-syphonage pipes. In reply to this it may be said that the by-law is to be preferred to the amendment: new buildings must not be allowed to offer any difficulties, and where there is any difficulty in old ones, owing to the want of proper fall in the waste pipes, the enforcement of this by-law is most essential, owing to the accumulation of dirty soap in them.

In criticising By-law 8, paragraph 1, the report most correctly proposes that the phrase "refit a soil pipe" needs further definition; in paragraph 3 it advises that the word "directly" be struck out, and approves of the word "connected" in preference to the word "communicate." In paragraph 4 it suggests that much of this might be struck out if all principal ventilating pipes were defined to have a minimum clear cross section of not less than nine square inches; and in paragraphs 5, 6, and 7, it is advisedly suggested that the words "to be approved of by the local authority" be added.

The criticism to By-law 11 questions the use of the word "owner," and would add "owner, lessee, and rated occupier," making all responsible to the local authority. This would undoubtedly be an advantage.

The criticism to By-law 13 maintains that this by-law is unintelligible, and would prevent improvements in old buildings for fear of bringing such under the operation of these new by-laws, and that no slight alteration could be made to any fittings without a liability of having to reconstruct the whole drainage system. It is proposed, with a view not to prevent gradual improvements, that the local authority should have discretionary power. As already remarked, this criticism points to a desirable alteration in rendering By-law 13 clearer upon the points raised.

ICHTHYOL IRRIGATIONS IN GONORRHŒA.

ONE of the newer methods of treating gonorrhœa is that proposed and carried out by Janet in 1892—viz., irrigation of the urethra with a solution of permanganate of potassium of the strength of a fifth of a grain to the ounce. This plan was subsequently practised in the St. George's Hospital at Hamburg, but without very satisfactory results; sometimes, indeed, very unpleasant effects were produced, such as painful œdema, hæmorrhage, and peri-urethral infiltrations. The Hamburg surgeons, however, have recently made further trials of Janet's irrigations, but with different solutions substituted for the permanganate. Ichthyol having been shown by Jadassohn to exert a very antagonistic effect to the multiplication of gonococci in mucous membrane, and having been favourably reported on by Canova of Paris as suitable for irrigating, was selected. The irrigator reservoir was a large glass vessel holding about four quarts. From this the fluid was conducted by an indiarubber tube, the lumen of which was sufficiently large to admit the thumb. At the other extremity was an ordinary urethral cone. A warm or cold 1 per cent. solution of ichthyol was used during the first five sittings, and afterwards this strength was doubled. The glass reservoir was placed on a stand, the height of which could be altered so as to exert as much hydrostatic pressure as might be required.

The most convenient position for the patient was found to be sitting on the edge of a stool, as in this position the resistance offered by the compressor urethræ and the sphincter appeared to be most easily overcome. In addition to the irrigations, which were carried out daily, the patient was directed to use a urethral syringe with a weak (½ per cent.) solution of ichthyol morning and evening, though but little was expected from this adjunct to the regular midday irrigations performed by the surgeon. These latter were carried out as follows. The patient, having first of all micturated, sits on the edge of a chair, leaning well back, and opening his legs. The terminal of the tube is now inserted into the urethra and the liquid allowed to enter so as to distend the passage. When this is accomplished and the dilatation can be felt by the surgeon's fingers the liquid is allowed to flow out, and will be found to be cloudy from flocculi and threads; and the douches must be repeated until the issuing liquid is quite clear. This generally takes ten or twelve ounces, and in this way the anterior portion of the urethra is effectually cleansed. A height of a little over three feet is sufficient for the reservoir during this part of the operation. If the posterior portion of the urethra is affected the reservoir is subsequently raised to about five feet above the patient's seat and the full force of the column of fluid obtained by compressing the meatus against the glass cone. In many cases the resistance of the compressor is overcome, especially when a little time is allowed, and the fluid passes into the bladder. Several ounces are thus introduced and the patient is then allowed to

micturate, care being taken once or twice during the flow to compress the urethra suddenly so as to obtain a better dilatation of its lumen.

Dr. Werner, writing in the *Monatshefte für Praktische Dermatologie* for August, gives an account of the results of this treatment in the 82 cases in which information was available. In 20 of these the disease was confined to the anterior portion of the urethra and had lasted for from a week to two months before the beginning of the treatment. Absolute cure was obtained in 19 cases with from 6 to 35 sittings (average 17). In 62 cases the posterior part of the urethra was also affected, and of these a cure was obtained in only 52, the number of sittings required being from 2 to 40 (average 19). The single unsuccessful case of anterior urethritis was one of a month's duration. Here, however, the gonococci disappeared after 28 douches, but as the catarrh continued the cure could not be said to be complete. It was, however, quickly effected by zinc sulphate injections. Of the 9 cases where cure was not obtained some left the hospital against advice before a cure could be effected, and in some epididymitis supervened which obliged the douches to be discontinued. In three of them, however, the gonococci had entirely disappeared after from 3 to 28 douches. Several cases of gonorrhœal cystitis, some of them with pyrexia and severe tenesmus, were very successfully treated by ichthyol douches, but in some others no effect was produced and the cure was obtained by argonin. A number of cases were treated by means of douches of resorcin of the strength of 1 per cent. applied similarly to the ichthyol irrigations, but with very much less satisfactory results. As evidence of absolute cure Dr. Werner requires the following facts: (1) that after twenty-four hours' cessation from treatment no visible discharge is present; (2) that the urine when poured from one vessel into another is free from threads; and (3) that no gonococci can be detected in the last gonorrhœal threads found. Strictly speaking, of course, further examination should be made later, but this is impracticable with hospital out-patients.

A NOTEWORTHY INQUEST.

AN inquest has recently been held at Bushey which presented many features of peculiar interest. The deceased, a woman who had died in childbirth, had arranged to be attended during her confinement by a midwife. At 6 A.M. on the morning of March 29th hæmorrhage came on. The midwife was summoned and arrived at 7.50 A.M. What followed can be learned from her deposition:—

Alice Mary Jennings, a midwife, states: "I saw the deceased woman first about 7.45 on Monday morning, March 29th. I then examined her and found that she had then lost between three and four quarts of blood, so far as I can judge. I was told that she had had a fainting attack. She was on the bed, and I found that the head was presenting with the face, and that the placenta was partially presenting. The head of the child had not entered the pelvis, the os uteri was rather larger than half-a-crown, and the cervix was not entirely shortened. There was not much bleeding going on. I plugged the os lightly with a soft silk handkerchief. I did not attempt to sterilise the handkerchief in any way, but I used a solution of 1 in 500 of corrosive sublimate for washing my hands. I did not use any vaginal douche. When the os was dilated, something after nine o'clock, I ruptured the membranes and separated the placenta as far as I could reach it, and brought down one foot at first, and after that there was little or no further loss of blood. The labour pains were very few and ineffective. I brought down the other foot about 11.30, and the child was finally born at 12.30. I administered one dose of quinine, fifteen grains. When I first plugged the os I gave fifteen grains of chloral. I gave her also one ounce of cane sugar. Neither the quinine nor the sugar had any effect on the pains. After the expulsion of the placenta I gave her a douche of iodine, about a teaspoonful of a mixture of equal parts of the tincture and the liniment of iodine. I gave her two and a half grains of ergotin in tabloid form. The woman seemed fairly comfortable. Her pulse was beating 120 to the minute, it was weak, and was like a pulse which I expect after hæmorrhage. I stayed about one hour and a quarter after the child was born. The uterus when I left was well contracted. The pulse had improved, and she wished to go to sleep. I left about 1.45. She had been taking nourishment very freely all the morning. I gave egg, milk, tea, and no stimulant. About 3 o'clock her husband came for me, saying that she was in violent pain, but by the time I arrived the pain had ceased, the uterus was still well contracted, and there had been no further severe loss of blood. She was looking very ill, her pulse was very rapid, and she complained of feeling faint. I administered about three-quarters of a teaspoonful of sal volatile, and I injected by the rectum three pints of saline mixture. She seemed much better and said she felt more comfortable, but from time to time she said that she felt faint. I administered brandy and sal volatile, bovril, and about 4.30 I noticed her breathing change very much. I then sent for a doctor and I injected ether hypodermically—rather over a drachm in all—but before I had finished injecting the ether the patient was dead. If I had thought it necessary I should have sent for a doctor earlier, but I did not think it necessary considering the condition of the woman. I think now, after the event, that I should have sent earlier for a doctor. I hold a certificate from the British Lying-in Hospital and I hold the Obstetrical Society's diploma. This is one of the cases in which I was taught to send for a doctor immediately."

A post-mortem examination was made by Mr. Arthur Stradling of Watford, who examined the body of the deceased about thirty-two hours after death.

"I examined the heart," he deposed, "and found a clot in the pulmonary artery, the right side of the heart being empty. There was no sign of previous disease in any organ. The uterus was relaxed, somewhat pallid; the appendages normal. The site of the placenta was at the fundus. It was empty. There were no signs of any recent operation, nor were there any tears or laceration in any part of the genital tract. I formed the conclusion that death was caused by the clot in the pulmonary artery. There was no sign of the placenta being prævia. I was informed by the nurse that there had been no hæmorrhage previous to the commencement of labour. The body was not actually drained of blood."

At this point the inquest was adjourned until April 7th, when nine medical men appeared to testify to the correctness of the conduct of the case by the midwife. The court was then cleared and the coroner, Dr. Lovell Drage, summed up as follows:—

"The first duty of the jury in an enquiry such as this is is to find the actual cause of death. The evidence provides, in the case of the unfortunate woman of whose body you have had the view, conclusive evidence upon this point, to the effect that it was caused by pulmonary embolism subsequent to ante-partum hæmorrhage, and I charge you to this effect. The second duty is to consider the circumstances of death. The hæmorrhage, which undoubtedly was at the root of the question of the cause of death, occurred before the midwife responsible for the care of the deceased woman arrived. She therefore was in no way responsible for it. But the question arises, given the hæmorrhage at the commencement of labour, is it reasonably probable that the condition which subsequently produced death might have been prevented if skilled assistance had been promptly obtained? I must remind you that the midwife admits in her evidence that during her training she was taught that this was one of the cases in which she must summon a medical man. If she was so taught there can be no reason to doubt that the condition is one well recognised as being fraught with danger to the patient. This question of probability is one of great difficulty, and I urge you to follow closely what I have to say to you. The conditions which favour the formation of such a clot as that which caused this death are three—those peculiar to all pregnant and lying-in women, those the result of hæmorrhage, and those the result of the disease. The two former were present in this case. The deceased woman on the arrival of the midwife had already had a fainting fit, and from the evidence the hæmorrhage must have been a large one. In such a case it was the plain duty of the person responsible to do what was necessary to restore the circulation and to terminate the labour as soon as was practicable. I must remind you that the condition which actually caused death is one which arises under a variety of circumstances, and you must consider carefully whether you should look upon the fatal result as one which was probable in the case of a young healthy woman if skilled assistance had been procured early. Accidents occur, no doubt, in all hands, and, with my experience of midwifery, no one is more alive to this than I am. If you are satisfied that a fairly reasonable treatment was adopted you must come to the conclusion that accident was the cause of that fatal condition. If you are not so satisfied you must carefully weigh the probability of that fatal condition being the result of causes which were not controllable by human agencies and the probability of its being the result of the neglect of measures which might have been adopted and which might have saved life. Death from pulmonary embolism may undoubtedly occur in any woman after delivery, but it is a rare cause. In an experience of about 1200 cases of delivery in private practice I have only known one, and in a hospital experience of about 800 I cannot recollect any. So far as my experience shows it has occurred once in about 2000 cases, and in that case I was not summoned until after delivery was completed."

The following verdict was then given:—

"That the said Adelaide Emily Whiteley died on March 29th from pulmonary embolism, subsequent to ante-partum hæmorrhage. That the midwife is much to blame—(1) for not calling in a doctor when she found at 8 o'clock in the morning the very serious condition of her patient; (2) for not acquainting the husband with that serious condition; (3) for exceeding her duties as a midwife, contrary to the rules of the Obstetrical Society, and in the absence of a medical man."

The verdict is an exceedingly serious one for the midwife. With her actual procedure from a medical point of view we are bound to be satisfied, as it would seem that no less than nine medical men testified to the correctness of her conduct of the case. Her diagnosis of a placenta prævia, however, was directly challenged by medical evidence, so that by analogous reasoning she would seem here to have been in error. But we are not disposed to blame her or add to her grief at the loss of her patient by laying much stress on this failure to comprehend the pathology of the case. Such knowledge was not to be expected of her. Where she went wrong was in assuming responsibilities which she was unequal to meet, and the jury could not have pointed this out to her in more firm and uncompromising terms.

THE NEW WATER-SUPPLY AT WORTHING.

THERE is no more important event in the history of a town than the inauguration of a pure and plentiful water-supply, and nowhere can there be a subject for warmer congratulation than the completion of the new waterworks undertakings at Worthing. The Council have been beset with all kinds of difficulties and obstacles ever since they have gallantly endeavoured to replace the old and condemned source of supply. The problem has at length been successfully solved, and the authorities are to be highly commended on the excellent spirit and energy they have shown in their anxiety to free the town from so unenviable a subject of reproach as its water-supply. On Monday next, the 26th inst., the new works are to be formally opened by His Royal Highness the Duke of Cambridge, and the occasion is one upon which the inhabitants of Worthing may well rejoice.

The water is drawn from a well at the foot of the South Downs. The new works which are to replace the temporary provision were commenced some two years ago, but several unavoidable delays have occurred. They are situated about two miles north of the town, and with the pumping station and reservoir cover about three and a half acres of ground, the reservoir standing further northward on the chalk soil itself, the excavation for that purpose amounting to no less than 12,000 loads. The capacity of the reservoir is about 2,000,000 gallons, which should serve as an ample stock for daily supply, the requirements being on the average about 750,000 gallons per day. The walls are very solidly built, being constructed of layers of concrete asphalt and very hard brick. The engines to be used alternately are each of about 87 horse power, and each engine and set of pumps is capable of raising a thousand gallons of water a minute to a height of 215 ft. Every possible precaution has been taken to secure the water in the well against contamination. The shaft of 119 ft. is cased with flanged iron shields in segments, the joints being made of pitch pine vertically and of yarn and Russian tallow horizontally, headings having been provided to increase the supply 150 ft. in length, 6 ft. high, and 4 ft. wide.

At our request the Mayor (Captain A. B. S. Fraser) was good enough to forward us a sample of water taken from the reservoir, which we have duly submitted to analysis and examination in THE LANCET Laboratory. The water was contained in a clean, stoppered, clear glass Winchester quart bottle. The stopper was tied down with leather and secured with string properly sealed. A tag tied to the neck had the following written upon it: "From the Mayor, A. B. S. Fraser, 14/4/97; countersigned W. H. P. Fletcher, chairman of Sanitary Committee of Worthing." The label upon the side of the bottle bore the following words: "Water from Reservoir, Worthing New Permanent Waterworks, taken at 7 A.M. Thursday, April 15th, 1897. Frank Roberts, Borough Surveyor; Chas. T. Gardner, Sanitary Inspector." The results of our analysis together with other observations are as follows:—

Analysis of Worthing Water taken from New Reservoir.

Appearance	Bright and clear.
Colour	Slight greenish tint.
Smell	None.
Total solids	19·60 grains per gallon.
Loss on ignition	1·40 " " "
Change on ignition	Slight, no charring.
Temporary hardness	12·52 grains per gallon.
Permanent hardness	4·00 " " "
Chlorine in chlorides	1·82 " " " (equal to common salt, 3·00 grains per gallon).
Nitrogen in nitrates	0·35 grains per gallon.
Nitrogen in nitrites	None.
Free ammonia	None.
Albuminoid ammonia	0·0056 grains per gallon.
Oxygen absorbed	0·02 " " "
Phosphates	No trace.

These results are in perfect accordance with those obtained with water of the well-known purity and character furnished from the chalk. Considering the results as a whole, there is not the slightest indication of contamination with objectionable organic matters. This is particularly evident from the fact that the water was absolutely free from free ammonia, contained no nitrites, and no trace of phosphates, while the solids on ignition yielded no smell or other evidence of organic matter present. The chlorides, again, are typical of pure natural water, and the factor "oxygen absorbed" is so low as to show that the water is quite free from oxidisable substances. Since the water is well aerated it would be a matter of surprise to obtain any other result. Again, the amount of nitrates is distinct and in a quantity characteristic of waters that have met with the great purifying processes of nature. The sample was bright and clear, possessed no smell, and exhibited a slight greenish tint when viewed in deep column. As might be expected, it is somewhat hard, the total hardness being 16·52°, of which 12·52° are removable on boiling.

We congratulate Worthing on at last possessing such an evidently pure and abundant supply of water that proves to be excellent for all dietetic purposes, and we trust that the inhabitants have heard for the last time of the troubles contingent upon the pollution of life's first necessity. The authorities have worked unremittingly towards securing a satisfactory solution of what has proved a difficult problem, and they have not been neglectful to learn and profit by one of the first lessons in sanitation. The experience has been a bitter one, but it has led to an eminently satisfactory issue, and confidence in the future being restored there is no reason why it should not be permanent. We propose to examine further samples from time to time in THE LANCET Laboratory, both chemically and biologically, and to publish the results. It will be interesting to see if the composition of the water undergoes any variation, whether taken from the source, reservoir, or service pipes.

THE FINANCIAL CONDITION AND REQUIREMENTS OF THE UNIVERSITY OF CAMBRIDGE.

WE have received from the Chancellor of the University of Cambridge (the Duke of Devonshire, K.G.) a statement concerning the present financial condition of that University and its future pecuniary outlook, which cannot fail to strike our readers, as it strikes us, as one of the deepest importance. Space will not permit us to do more than summarise the statement, which, it should be added, is authoritative, if not official, being the outcome of a recent meeting to which all the principal officers of the University and representatives of the several colleges were invited. In his Grace's words, it may therefore be considered as "made on behalf of a very large number of those who are conducting the practical educational work of the University."

The statement commences by pointing out that the common assumption that the University of Cambridge is a very wealthy body is not justified or justifiable. On the contrary the fall in agricultural value has seriously diminished the available income of the University and its constituent colleges, while the expenditure necessary to provide for the maintenance of the several branches of instruction and research has steadily increased. Benefactions for general academic purposes have also practically ceased, although many munificent donations have been made for the founding of special prizes.

The expenditure of the University in 1896 was as follows:—

Stipends of officers, professors, readers, University lecturers, demonstrators, examiners, &c.	£33,229
Maintenance of establishments, repairs, rates, wages, &c.	22,057
Instalment in repayment of building loan (£40,000)	2,256
Part of the payment for purchase of building sites	5,000
Total	£62,542

The stipends to be paid number 120, and speaking generally the services rendered amount to tuition in all the higher branches of literary, philosophical, and mathematical subjects, as well as all the various departments of natural science. The stipends are partly met by College Fellowships as the present statutes direct that a professor who is also a Fellow of a hall have his stipend diminished by £200 per annum

in consideration of his College dividend. College dividends in nearly every instance fall below £200; this means that in many cases the total stipend falls below its nominal amount. The establishments to be maintained comprise the University Library and certain Special Libraries, the Divinity and Literary Schools, the Observatory, the Botanic Garden, eight Museums, and eight Laboratories.

The general revenue for 1896 was thus made up:—

Capitation Tax and fees for matriculations, examinations, degrees, &c.	...£39,366
College Contributions (net.)	... 16,577
Endowments (net.):—	
(*a*) For special purposes	... 5 850
(*b*) Not specially appropriated	844
Total	£62 637

With regard to the revenue we learn that the Capitation Tax on undergraduates has recently been more than doubled, and that many of the Degree Fees have been raised; that the College Contributions owing to long continued agricultural depression have not ensured to the University the large and expanding income that the Commissioners under the Universities Act of 1877 had anticipated; and, lastly, that the insignificant amount received from Endowments being largely derived from tithe and agricultural rents, has decreased and will decrease still more.

This is the financial position of Cambridge University, exposed by the statement that we have received from the Duke of Devonshire at a time when the number of students in the University is just double what it was in the last generation, and when ample accommodation and equipment in all the departments of learning are urgently required. A number of important branches of study are unrepresented by professorships. There are serious requirements involving capital expenditure, of which the following are specified:—the space occupied by the University Library must be considerably extended; a building must be provided for a School of Law; University lecture-rooms, offices, and examination-rooms are all needed, the present accommodation being totally inadequate; the buildings assigned to the departments of botany, zoology, and pathology are over-crowded and inconvenient; and a suitable museum is necessary for the proper display of the antiquarian and ethnological collections of the University.

"It will thus be seen," the statement concludes, "that while the resources of the University are essentially inexpansive, the reasonable demands upon it for further large expenditure are urgent and increasing. To meet these in the manner contemplated by the Commissioners of 1877 and expected by the nation at the present day, the re-endowment of the University in respect of many of its departments is a pressing necessity."

THE GRECO-TURKISH WAR.

ALTHOUGH it is well known that Turkish troops always form a formidable force to deal with, and that the Turkish soldier is very brave and resolute in battle and what Rudyard Kipling terms a "fust-class fighting man," it was generally believed that, owing to their weak and effete military system, the Turkish army was not well led, well fed, or properly cared for. The accounts that have been published regarding the condition of preparedness of Turkey for war, and of their medical service and field hospital organisation, are consequently calculated to awaken surprise. The Turks, as a Mahommedan Power holding the doctrine of fatalism as an article of their religious faith, have not hitherto been remarkable for the care they have taken of the sick and wounded. But they have apparently learned as a matter of experience the necessity of having a well-organised medical system and properly equipped hospitals for field service, and their advances in this respect have been great if we may judge from the accounts that have appeared as to the efficient and comfortable state of their hospitals in the present war. The excellence of their hospital organisation and arrangements have been more than once adverted to by the special correspondent of the *Times*. Ahmed Pasha is the chief of the medical service at Elassona, and he has lately accepted the offer of medical assistance made by Sir E. Vincent. No accounts have been published of the state of the Greek medical service and hospital organisation for war, although it is well known that great efforts have been made of late in this direction, with what results we shall probably soon learn. The Greeks have, as we know—for several nurses have gone from this country—organised a system of female nursing for their hospitals, and ladies of the Royal family and others have been taking an active part in this and other matters connected with the present war. According to a telegram that appeared in the *Daily News* the preparations still leave something to be desired in the way of surgical and medical stores, such as disinfectants, lint, bandages, &c., for the Hellenic hospitals. The Greeks have sent out two hospital ships to Volo to take off the wounded. The steamer *Thessaly* has been converted into a floating hospital with 300 beds for this purpose, on the initiative of the ladies of Athens and under the patronage of the Queen of Greece.

The accounts from the scene of warfare are somewhat conflicting and difficult to understand. As might be expected, they vary very much according to the source whence they are derived. But there does not appear to be any doubt that the Turks have captured the whole of the Maluna Pass and driven their Greek enemy across the frontier towards the plains of Thessaly, where a big and decisive battle may be expected to follow. Strategically considered, the military importance of this achievement seems undoubted, for the possession of this pass directly opens up the way to Larissa, the headquarters of the Greek force. At Reveni, however, one of the principal entrances into Thessaly, and in some other directions the Greeks claim to have gained great advantages.

The very difficult and mountainous nature of the country where the fighting has hitherto taken place has been opposed to the occurrence of any close and decisive engagement between large masses of troops; and the clearing of the ground and hill sides of the wounded must have been a matter of much difficulty, requiring an ample provision of ambulance transport in order to render timely aid and succour to the wounded of both belligerents, during the severe fighting which has taken place. All accounts agree that there has been great determination and valour displayed on both sides in attacking and defending important positions. It is still possible that, as the fighting is on such extended lines, the war, which looks as if it were too acute to last long, may nevertheless be more protracted than is generally thought, unless some decisive battle on a large scale soon takes place. At the present moment the Turks seem to be the masters of the situation. The object of the European Powers will be, of course, to confine the warlike operations to the belligerents now engaged and prevent, if possible, a general conflagration in the East, the disastrous consequences and ultimate results of which no one could foretell. In the meantime there will, it seems to us, be ample opportunity for the work of volunteer aid and International Red Cross societies to provide hospital and surgical succour for the sick and wounded—Christians and Mohammedans alike.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS.

THE ROUTES TO MOSCOW AND THE EXPENSES OF TRAVELLING.

THE English Committee acting for the organisation of the Twelfth International Medical Congress to be held in Moscow from Aug. 19th to Aug. 26th inclusive have mapped out a choice of routes by which Englishmen desirous of attending the Congress may proceed to the Russian capital. We propose here to sketch in outline the principal ones—that is to say, those which are most convenient, most direct, and least expensive. It will, of course, be open for individuals to vary the journey by breaking it at interesting places or by going rather off the direct line in order to visit other places of interest. We shall probably, however, not be very far wrong in presuming that most practitioners will prefer to proceed direct to Moscow in time for the opening of the Congress, and that those who wish to break or vary the journey will do so on their way back rather than on the outward journey. The present statement will, therefore, be confined to the most direct routes to Moscow only.

The following five skeleton routes fall into two groups. By the first two routes, A and B, the journey is an overland one, by rail the whole way; by the remainder the journey is, for the most part, by sea, the time spent in a railway train being reduced to a comparatively few hours.

Route A.—Overland to Moscow, *viâ* Flushing, Berlin, and Warsaw. Approximate time of journey 84 hours. Leave Victoria (say) Saturday, Aug. 14th, 8 30 P.M. Night crossing Queenborough to Flushing. Leave Flushing 5 5 A.M.; arrive Berlin 7 P.M. Sunday. Leave 11 P.M.; arrive Alexandrovo (Russian frontier) 7 A.M. Monday. Leave 8 21 A.M.; arrive Warsaw 2 32 P.M. Leave 4 5 P.M.; arrive Moscow 8 30 A.M. Wednesday morning, Aug. 18th. The Congress will commence on Aug. 19th. Fares: London to Berlin, £4 3*s.* 9*d.* first class; £2 18*s.* 10*d.* second class. Berlin to Moscow, £4 17*s.* 6*d.* first class; £3 5*s.* second class. Sleeping cars: Berlin to Alexandrovo, 10*s.* 6*d.* first class, 7*s.* second class; Warsaw to Moscow, 18*s.* first class; 16*s.* second class. A return ticket lasting thirty days can be taken from London to Berlin, costing £5 19*s.* first class and £4 3*s.* 5*d.* second class. This route has the great advantage of speed. It will be possible to leave London at 8 30 P.M. on Sunday night, Aug. 15th, and arrive in Moscow early on Thursday morning, the opening day of the Congress. By leaving a day or two earlier the journey might be broken at Berlin, Warsaw, or Smolensk. A branch committee of the Congress has been formed at Smolensk to facilitate the journey for foreigners. The total cost by this route, including sleeping cars, is as follows: Single fares, £10 9*s.* 9*d.* first class; £7 5*s.* 10*d.* second class. Return fares, £18 11*s.* first class; £12 7*s.* 1*d.* second class. The living on Russian railways is good and cheap. The fares here given as return fares are obtained by doubling the fares beyond Berlin and adding the return fare to Berlin; return tickets on the Russian lines would probably be less. Messrs. Cook and Son (Chief Office, Ludgate-circus) undertake to supply through tickets if applied for six days in advance; otherwise it is necessary to book to Berlin and re-book from there to Moscow. The travelling expenses by this route, it will be noted, will not exceed £20, to which another £4 may be added for meals, &c., while travelling. The cost of staying in Moscow will depend on whether the traveller stays at an hotel or is entertained by an English family. In any case, the whole trip by this route need not cost more than from £30 to £35, first class both ways; by travelling second class the expenses will be some £6 less. Both the German and Russian lines have comfortable second-class carriages. The sleeping cars are practically the same for both classes. There is some probability that the fares on the Russian lines will be reduced for members of the Congress.

Route B.—Overland to Moscow, *viâ* Flushing, Berlin, and St. Petersburg. Approximate time the same as Route A. Route to Berlin as above. Leave Berlin 11 P.M. Sunday; arrive Wirballen (Russian frontier) 12.9 noon Monday; leave 2.4 P.M.; arrive St. Petersburg 10.45 A.M. Tuesday. Proceed to Moscow the same night or the following night. It is necessary to drive across St. Petersburg from the station of arrival to the Nicolas Station (Nicolaiefski Volksaal). Trains at 3 P.M., arriving at Moscow 8 10 A.M. next day (slow but cheaper) and at 9 P.M., reaching Moscow 10 10 A.M. (faster but more expensive). Fares: London to Berlin as in Route A; Berlin to Moscow, £6 9*s.* first class, £4 8*s.* 6*d* second class. Sleeping cars, Berlin to Wirballen, 12*s.* 6*d.* first class, 10*s* 6*d.* second class; Wirballen to St. Petersburg, £1 5*s.* first class, £1 1*s.* second class. (The fares on this line vary slightly with the train selected.) This route has the same advantage of speed as the last. It will be possible to leave London on Sunday evening, arrive in St. Petersburg before 11 A.M. on Wednesday, and proceed to Moscow that night. The fares on the Russian lines will probably be reduced for members of the Congress The total cost of travelling by this route will be from £25 to £30 first class, including the cost of living on the journey; or from £20 to £25 second class. There is a *train de luxe du Nord* which starts from Charing-cross and Victoria at 10 A.M. every Saturday (*viâ* Ostend); the single fare to St. Petersburg by this train is £15 4*s* 6*d.* A similar express train leaves Charing-cross and Victoria at 11 A.M. every Saturday for the Dover-Calais route *viâ* Brussels and Cologne to Berlin. The fare to St. Petersburg by this route is 10*s.* 3*d.* more than *viâ* Ostend. The journey by either route is completed in 52 hours; St. Petersburg is reached on Monday at 3 50 P.M. (Russian time). These trains have dining-cars attached.

Route C.—Direct by sea from London or Hull to St. Petersburg, and by train thence to Moscow. Two English lines of steamers run to St. Petersburg, the Wilson line and the Bailey and Leetham line. The Wilson steamers (London agents, W. E Bott and Co., 1, East India-avenue, E.C., who will give detailed information of the sailings later) sail every Saturday from Hull, and reach St. Petersburg usually on the following Friday or Saturday. Occasionally in the summer a steamer sails in addition in the middle of the week. The steamers have accommodation for between fifteen and thirty first-class passengers. They do not, as a rule, call at any intermediate port, but the voyage is far from monotonous, the scenery in the Cattegat and Sound and in the Gulf of Finland being exceedingly picturesque. Fares: £5 5*s.* single; £7 17*s.* 6*d.* return (available by any steamer during the season). The charge for meals is 6*s.* 6*d.* a day, exclusive of liquors. The Bailey and Leetham steamers (London address, 12, Mark-lane, E.C.) sail from London every week or ten days; the days of sailing are not fixed. The fares and charges for meals are the same as on the Wilson steamers. From St. Petersburg to Moscow, for trains, see previous routes. The fares are about £2 first class, and £1 5*s.* second class, including sleeping car, but vary slightly with the train selected. The total cost, going and returning by this route, would be as follows:—

Return fare on steamer	£7	17	6
Stewards' fees	1	0	0
Fares to and from Moscow, first class	4	0	0
(If second class only £2 10*s.*)			
Total	£12	17	6

The actual travelling expenses are thus reduced to £12 17*s.* 6*d.*, or with a liberal margin for extras, £14. Living on board is cheap, the charge, as stated above, being 6*s.* 6*d.* a day; twelve days (out and home) at this rate would cost £3 18*s.* The charges at the buffets on the railway are also cheap, so that the essential expenses of the trip would be less than £20. If, as is hoped, the English members of the Congress are to be hospitably accommodated by the English colony in Moscow the additional expenses need be very slight. If, on the other hand, the visitor should stay at an hotel for eight days in Moscow and two or three days in St. Petersburg his additional expenses need not exceed £10, and will probably be less. In this way the whole trip, for which four weeks should be allowed, will cost from £25 to £30. For this sum the trip may be accomplished in ease and comfort. Since the Congress is to be opened on Thursday, Aug. 19th, it will be necessary to sail on Saturday, the 7th, if this route is chosen. The spare three or four days could be spent in St. Petersburg. Should an extra steamer, as sometimes happens, be despatched, say, on Wednesday, Aug. 11th, it would enable passengers to arrive in Moscow on the morning of Thursday, the 19th, the opening day of the Congress.

Route D.—By sea from Hull to St. Petersburg direct, or by sea from Hull to Helsingfors; thence by train to St. Petersburg and Moscow. A Finnish line of steamers (London agents, Chas. Gee and Co., 17, Gracechurch-street, E.C.) sends a boat from Hull every Saturday. The steamer reaches Hango the following Wednesday, and Helsingfors the following Thursday. Trains leave Helsingfors 8.50 A.M., reaching St. Petersburg 10 40 P.M.; and 8.15 P.M., reaching St. Petersburg 9.40 A.M. Trains also go from Hango to St. Petersburg. Fares to members: Hull to St. Petersburg, £4 8*s*; Hull to Helsingfors, £3 15*s.* Charge for meals 5*s.* a day. Fares from Helsingfors to St. Petersburg about £1. Trains and fares from St. Petersburg to Moscow as in previous routes. Members of the Congress who wish to be in time for the opening day would have to leave Hull on Saturday, Aug. 7th, reaching Helsingfors on Thursday, the 12th; this would allow a week to visit places of interest in Finland and to proceed at leisure to St. Petersburg and Moscow. Total cost by this route, Hull to Moscow, £8; return, £14; meals extra. This is one of the cheapest routes. The boats are comfortable and have electric light throughout; the cuisine is Swedish. There is a stop of several hours in Copenhagen, enabling passengers to land and see the city. Helsingfors, the Finnish capital, is also well worth seeing.

Route E.—By sea from London, Hull, or Grimsby to Gothenburg; thence by train or canal to Stockholm; thence by sea to St. Petersburg; thence by rail to Moscow. The S.S. *Thule* or S.S. *Thorsten* (London agents, W. E. Bott and Co., East India-avenue, E.C.) leaves London every Friday morning; voyage to Gothenburg about three days.

The journey from Gothenburg to Stockholm may be done by rail in twelve hours; by canal, passing some of the most beautiful scenery in Sweden, in about two days. Canal steamers sail almost daily. Steamers leave Stockholm for St. Petersburg three times a week; the voyage takes two and a half days. These steamers call at Abo, Hango, and Helsingfors, and are exposed to the open sea for only a short distance. The Wilson Line sends a steamer from Hull to Gothenburg every Saturday after 5 P.M., and one from Grimsby to Gothenburg every Thursday at noon. From Gothenburg the journey would be continued as above. Fares: London to Gothenburg, £3 3*s.* single, £5 5*s.* return, available during the season. Hull or Grimsby to Gothenburg the same. Living on board in all cases 6*s.* 6*d.* a day. Gothenburg to Stockholm, by rail £1 9*s.* 6*d.* second class, by canal £2 8*s.* 4*d.*, including food. Stockholm to St. Petersburg by sea, to members, £1 16*s.* St. Petersburg to Moscow, *vide* previous routes. The time taken by this route would be as follows:—

By sea to Gothenburg about...	3 days.
Gothenburg to Stockholm by rail or canal...	½ or 2 days.
Stockholm to St. Petersburg	2½ days.
St. Petersburg to Moscow	1 day.
	7 or 8½ days.

To reach Moscow in time for the opening of the Congress it would be necessary to sail from London on Friday, Aug. 6th, or from Hull on Saturday, Aug. 7th, as the following week's sailing would be too late. But it would be just possible to sail from Grimsby on Thursday, Aug. 12th, and, crossing Sweden by rail, to reach Moscow on the morning of Thursday, the 19th, the opening day of the Congress. The total cost by this route would be as follows:—

	£	*s.*	*d.*
Return fare to Gothenburg	5	5	0
Gothenburg to Stockholm and back (second class)	2	1	0
Stockholm to St. Petersburg and back...	3	12	0
St. Petersburg to Moscow and back (first class)	4	0	0
	£14	18	0

Meals for fifteen days' travelling (mostly at 6*s.* 6*d.* a day), say, £5. This will bring the total travelling expenses, going and returning by this route, to between £20 and £25. Add £10 (if the visitor stays at an hotel), and the total expenses amount to between £30 and £35. It would be considerably cheaper to go this way and return direct by sea, or *vice versâ*. Passengers by this route have an opportunity of seeing Gothenburg, Stockholm, Abo, Hango, and Helsingfors, in addition to St. Petersburg and Moscow. Tickets for all routes to Berlin, or all sea routes to St. Petersburg, are issued at any of Messrs. Cook and Son's offices.

Messrs. Thomas Cook and Son have arranged to conduct a party to Moscow at an inclusive rate. The outline of the trip they propose shows that a start will be made from Queenborough for Flushing at 8 30 P.M. on Thursday, Aug. 12th, and that Berlin will be reached on the following day, Warsaw on the morning of the 16th, and Moscow at 2 15 P.M. on the 18th. The return journey, commencing Friday, Aug. 27th, will be by St. Petersburg, Stockholm, Copenhagen, and Hamburg, and London will be reached at 7.50 A.M. on Thursday, Dec. 9th. The fare, which covers railway tickets, hotel accommodation, and conveyance of baggage (56 lb.), is 45 guineas. Messrs. Cook and Son offer an alternative return journey by Berlin and Hanover for which the inclusive fare is only 38 guineas.

Dr. Lunn, 5, Endsleigh-gardens, N.W., has arranged a twenty-eight days' cruise for 25 guineas, exclusive of the cost of living and travelling in Russia. A start will be made in the steam-yacht *Norse King* at 6 P.M. on Tuesday, Aug. 10th, from Newcastle, and St. Petersburg will be reached on Aug. 17th. The yacht will then wait at St. Petersburg, and the return journey will commence on Aug. 27th; Stockholm will be reached on Aug. 29th, Copenhagen on Sept. 3rd, Christiania on Sept. 5th, and Newcastle on Sept. 8th.

An account of the excursion organised by the executive committee of the Congress to visit the Caucasus will be found in THE LANCET of April 3rd, 1897, p. 974.

Whatever route be chosen the intending traveller must obtain a passport from the Foreign Office, and see that it is properly *visé* at the Russian Consulate, 17, Great Winchester-street, E.C. If he is going through Germany he had better get the German *visa* too.

Notice has been received from Professor W. K. Roth, Secretary-General of the Congress, of important reductions in railway fares that will be made to members of the Congress. French, Spanish, and Norwegian railways announce a reduction in fares of 50 per cent. The Italian railways offer a reduction varying from 30 to 50 per cent. The Hungarian railways will convey a member of Congress by a class superior to that for which he holds a ticket. Lastly, *free* return tickets will be given by the Russian railways from the frontier to Moscow and back.

Forms of inscription as Member of the Congress can be obtained from Mr. G. H. Makins, 47, Charles-street, Berkeley-square, London, W.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 5754 births and 3764 deaths were registered during the week ending April 17th. The annual rate of mortality in these towns, which had been 18·3 and 18·6 per 1000 in the two preceding weeks, declined again last week to 17·9. In London the rate was 16·6 per 1000, while it averaged 18·7 in the thirty-two provincial towns. The lowest rates in these towns were 9·5 in Croydon, 10·9 in Swansea, 11·9 in Nottingham, and 13·1 in Wolverhampton; the highest rates were 23·3 in Manchester, 23·4 in Halifax, 24·9 in Bolton, 25·8 in Blackburn, and 28·1 in Salford. The 3764 deaths included 335 which were referred to the principal zymotic diseases, against 346 and 338 in the two preceding weeks; of these, 105 resulted from measles, 100 from whooping-cough, 51 from diphtheria, 33 from scarlet fever, 30 from diarrhœa, 16 from "fever" (principally enteric), and not one from small-pox. No death from any of these diseases was recorded last week in Swansea; in the other towns they caused the lowest death-rates in Bradford, Croydon, Nottingham, and Sunderland, and the highest rates in Oldham, Liverpool, Blackburn, Salford, and Bolton. The greatest mortality from measles occurred in Bolton, Manchester, Salford, Oldham, Burnley, and Newcastle-upon-Tyne; from scarlet fever in Leicester; and from whooping-cough in Leicester, Manchester, Salford, Burnley, Preston, Blackburn, and Gateshead. The mortality from "fever" showed no marked excess in any of the large towns. The 51 deaths from diphtheria included 30 in London, 3 in West Ham, and 2 each in Birmingham, Liverpool, Manchester, Leeds, and Sheffield. No fatal case of small-pox was registered during the week under notice either in London or in any other of the thirty-three large towns. There were 11 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, the 17th inst., against 21, 17, and 16 at the end of the three preceding weeks; one new case was admitted during the week. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2406, against 2585, 2512, and 2449 on the three preceding Saturdays; 216 new cases were admitted during the week, against 224, 219, and 204 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 282 and 271 in the two preceding weeks, rose again to 274 last week, but were 121 below the corrected average. The causes of 47, or 1·2 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Leicester, Bradford, Newcastle-upon-Tyne, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Burnley, Blackburn, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 22·1 and 24·6 per 1000 in the two preceding weeks, declined again to 22·3 during the week ending April 17th, but exceeded by 4·4 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns

ranged from 18·0 in Leith and 18·4 in Aberdeen to 25·6 in Perth and 26·0 in Edinburgh. The 665 deaths in these towns included 39 which were referred to measles, 39 to whooping-cough, 12 to diarrhœa, 7 to "fever" (principally enteric), 6 to diphtheria, and 4 to scarlet fever. In all, 107 deaths resulted from these principal zymotic diseases, against 104 and 95 in the two preceding weeks. These 107 deaths were equal to an annual rate of 3·6 per 1000, which was 2·0 above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 29 and 33 in the two preceding weeks, further rose to 39 last week, of which 19 occurred in Glasgow and 19 in Edinburgh. The 39 deaths from whooping-cough exceeded by one the number in the preceding week, and included 22 in Glasgow, 5 in Leith, and 5 in Edinburgh. The deaths referred to "fever," which had been 6 and 3 in the two preceding weeks, rose again to 7 last week, of which 4 occurred in Glasgow. The fatal cases of diphtheria, which had been 9 and 4 in the two preceding weeks, rose again to 6 last week, and included 4 in Edinburgh, where two of the 4 deaths from scarlet fever were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 146 and 153 in the two preceding weeks, were 154 last week, and exceeded by 44 the number in the corresponding period of last year. The causes of 46, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 38·5 and 35·9 per 1000 in the two preceding weeks, further declined to 28·2 during the week ending April 17th. During the thirteen weeks of last quarter the death-rate in the city averaged 40·2 per 1000, the rate during the same period being 18·4 in London and 22·4 in Edinburgh. The 189 deaths registered in Dublin during the week under notice showed a decline of 52 from the number in the preceding week, and included 36 which were referred to the principal zymotic diseases, against 47 and 41 in the two preceding weeks; of these, 15 resulted from measles, 14 from whooping-cough, 2 from scarlet fever, 2 from diphtheria, 2 from "fever," and 1 from diarrhœa. These 36 deaths were equal to an annual rate of 5·4 per 1000, the zymotic death-rate during the same period being 1·4 in London and 5·7 in Edinburgh. The fatal cases of measles, which had declined in the four preceding weeks from 46 to 25, further fell to 15 last week. The deaths referred to whooping-cough, which had been 9 in each of the two preceding weeks, rose again to 14 last week. The 2 fatal cases of scarlet fever showed a slight further decline from recent weekly numbers, and the 2 deaths from diphtheria corresponded with the number recorded in the preceding week. The 189 deaths in Dublin last week included 34 of infants under one year of age and 38 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed a further decline from the high numbers recorded in recent weeks. Four inquest cases and 4 deaths from violence were registered; and 53, or more than a fourth, of the deaths occurred in public institutions. The causes of 10, or more than 5 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING MARCH, 1897.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during March in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 7·8 per 1000 of the population, estimated at 4,463,169 persons in the middle of this year. In the three preceding months the rates had been 10·7, 9·0, and 8·7 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Paddington, St. George Hanover-square, Marylebone, Hampstead, St. Martin-in-the-Fields, and Clerkenwell; while they showed the largest excess in Chelsea, Holborn, Bethnal Green, Mile End Old Town, Poplar, Battersea, and Wandsworth. Eight cases of small-pox were notified in London during March, against 3, 8, and 48 in the three preceding months; of these, 2 belonged to Strand, 2 to Poplar, 2 to Woolwich, 1 to Hackney, and 1 to Camberwell sanitary areas. There were 17 cases of small-pox under treatment in the Metropolitan Asylum Hospitals at the end of March, against 3, 8, and 43 at the end of the three preceding months; 8 new cases were admitted during the month, against 7 and 53 in the two preceding months. The prevalence of scarlet fever showed a further decline from that recorded in recent months; this disease was proportionally most prevalent in Chelsea, Bethnal Green, Mile End Old Town, Poplar, St. Saviour Southwark, Battersea, Wandsworth, and Plumstead sanitary areas. The Metropolitan Asylum Hospitals contained 2468 scarlet fever patients at the end of March, against 3601, 3246, and 2775 at the end of the three preceding months; the weekly admissions averaged 208, against 355, 245, and 228, in the three preceding months. The prevalence of diphtheria in London differed but slightly from that recorded in the two preceding months; among the various sanitary areas this disease showed the highest proportional prevalence in Chelsea, St. James Westminster, Holborn, Bethnal Green, Whitechapel, Mile End Old Town, Bermondsey, Wandsworth, and Camberwell. There were 776 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of March, against 829, 897, and 855 at the end of the three preceding months; the weekly admissions averaged 101, against 119, 105, and 101 in the three preceding months. The prevalence of enteric fever in London showed a further decline from that recorded in recent months; this disease was proportionally most prevalent in Kensington, Hackney, Bethnal Green, Whitechapel, Bermondsey, and Greenwich sanitary areas. Erysipelas showed the highest proportional fatality in Holborn, Bethnal Green, Limehouse, and Poplar sanitary areas. The twenty-three cases of puerperal fever notified during March included 3 in Fulham, 3 in Islington, 2 in Kensington, and 2 in Newington sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas, the deaths occurring in the institutions of London having been distributed among the various sanitary areas in which the patients had previously resided. During the five weeks ending Saturday, April 3rd, the deaths of 7441 persons belonging to London were registered, equal to an annual rate of 17·4 per 1000, against 17·6, 18·2, and 18·5 in the three preceding months. The lowest death-rates during March in the various sanitary areas were 11·7 in Hampstead, 12·8 in Paddington, 13·0 in Lee and in Plumstead, 13·1 in St. Martin-in-the-Fields, and 13·2 in Lewisham, (excluding Penge); the highest rates were 22·6 in Bethnal Green, 22·8 in Limehouse, 24·2 in St. Luke, 24·5 in City of London, 25·0 in Holborn, 27·6 in St. George-in-the-East, and 27·9 in Strand. During the five weeks of March 660 deaths were referred to the principal zymotic diseases in London; of these, 216 resulted from whooping-cough, 215 from diphtheria, 63 from measles, 63 from diarrhœa, 51 from scarlet fever, 45 from enteric fever, and 7 from small-pox. These 660 deaths were equal to an annual rate of 1·5 per 1000. The lowest death-rates from these diseases last month were recorded in Paddington, Westminster, Marylebone, St. Luke, Lee, and Plumstead; and the highest rates in St. Martin-in-the-Fields, Strand, Bethnal Green, St. George-in-the-East, Newington, and Bermondsey sanitary areas. Seven fatal cases of small-pox were registered in London during March, of which 3 belonged to Camberwell, 2 to Strand, 1 to St. Martin-in-the-Fields, and 1 to St. George Southwark sanitary areas. The 63 deaths referred to measles were less than a fourth of the corrected average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Bethnal Green, St. George-in-the-East, and Limehouse sanitary areas. The 51 fatal cases of scarlet fever were 30 below the corrected average number; the mortality from this disease showed no marked excess in any of the sanitary areas. The 215 deaths from diphtheria were 52 above the corrected average number; this disease was proportionally most fatal in Hackney, Shoreditch, Bethnal Green, Mile End Old Town, Bermondsey, Wandsworth, and Camberwell sanitary areas. The 216 fatal cases of whooping-cough were 125 below the corrected average number; among the various sanitary areas this disease showed the highest proportional fatality in Fulham, St. Giles, City of London, Newington, Bermondsey, Lambeth, and Camberwell. The 45 deaths referred to enteric fever slightly exceeded the corrected average number; the mortality from this disease showed no

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—MARCH, 1897.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1897.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,463,760	8	1472	1129	—	192	12	23	487	—	3323	7·8	7	63	51	215	216	—	45	—	63	660	1·5	7441	17·4	130
West Districts.																										
Paddington	126,161	—	27	19	—	3	—	1	6	—	56	4·6	—	—	—	5	6	—	—	—	2	13	1·1	155	12·8	105
Kensington	171,427	—	44	28	—	10	1	2	23	—	118	7·2	—	—	1	7	1	—	2	—	2	15	0·8	267	16·2	139
Hammersmith	105,959	—	34	13	—	1	—	—	7	—	55	5·4	—	—	1	4	2	—	1	—	2	10	1·0	159	15·6	99
Fulham	120,040	—	27	34	—	5	3	3	7	—	79	6·9	—	—	1	6	8	—	—	—	1	16	1·4	172	14·9	156
Chelsea	96,692	—	47	24	—	4	—	1	5	—	91	9·8	—	—	2	3	6	—	2	—	1	14	1·5	176	19·0	151
St. George Hanover-square	80,330	—	14	3	—	4	—	—	5	—	26	3·4	—	1	1	—	4	—	2	—	1	9	1·2	120	15·6	167
Westminster	53,027	—	17	12	—	—	—	1	5	—	35	6·9	—	—	1	1	1	—	—	—	—	3	0·6	86	16·9	73
St. James Westminster	22,576	—	4	10	—	—	—	—	1	—	15	6·9	—	—	—	1	1	—	—	—	—	2	0·9	41	18·9	167
North Districts.																										
Marylebone	140,808	—	21	12	—	6	—	—	23	—	62	4·6	—	—	—	3	3	—	2	—	1	9	0·7	250	18·5	127
Hampstead	77,275	—	10	16	—	4	1	—	1	—	32	4·3	—	1	—	4	2	—	—	—	1	8	1·1	87	11·7	81
St. Pancras	242,255	—	61	36	—	6	—	1	36	—	140	6·0	—	2	2	10	18	—	3	—	1	36	1·5	423	18·2	110
Islington	341,124	—	115	84	—	15	—	3	28	—	245	7·5	—	5	8	6	14	—	4	—	5	42	1·3	505	15·4	118
Stoke Newington	34,136	—	12	7	—	4	—	—	1	—	24	7·3	—	3	—	1	2	—	2	—	—	8	2·4	53	16·2	132
Hackney	216,658	1	83	69	—	14	—	1	20	—	188	9·0	—	1	6	13	10	—	2	—	1	33	1·6	325	15·6	118
Central Districts.																										
St. Giles	37,840	—	12	3	—	2	—	1	5	—	23	6·3	—	—	—	1	5	—	2	—	—	8	2·2	70	19·3	234
St. Martin-in-the-Fields	12,711	—	3	1	—	—	—	—	1	—	5	4·1	1	—	—	1	1	—	—	—	—	3	2·5	16	13·1	133
Strand	23,552	2	6	3	—	—	—	—	2	—	13	5·8	2	—	1	2	1	—	—	—	2	8	3·5	63	27·9	208
Holborn	30,493	—	13	12	—	2	—	—	6	—	33	11·3	—	—	—	2	3	—	—	—	1	6	2·1	73	25·0	206
Clerkenwell	66,162	—	16	6	—	3	—	—	6	—	31	4·9	—	3	1	2	3	—	—	—	—	9	1·4	131	20·6	107
St. Luke	41,279	—	5	10	—	2	—	—	6	—	23	5·8	—	—	—	—	3	—	—	—	—	3	0·8	96	24·2	110
City of London	30,228	—	9	6	—	—	—	—	2	—	17	5·9	—	1	2	—	4	—	—	—	—	7	2·4	71	24·5	137
East Districts.																										
Shoreditch	121,883	—	37	39	—	3	1	—	13	—	93	8·0	—	3	—	11	1	—	1	—	2	18	1·5	213	18·2	141
Bethnal Green	129,098	—	51	45	—	9	—	1	30	—	136	11·0	—	16	1	13	1	—	2	—	7	40	3·2	280	22·6	154
Whitechapel	79,724	—	17	20	—	6	—	—	4	—	67	8·8	—	—	—	4	—	—	—	—	4	8	1·0	155	20·3	114
St. George-in-the-East	47,917	—	8	16	—	2	—	—	9	—	35	7·6	—	5	1	2	3	—	—	—	1	12	2·6	127	27·8	160
Limehouse	66,508	—	22	9	—	1	—	1	11	—	44	7·8	—	6	1	1	3	—	—	—	—	11	2·0	128	22·8	150
Mile End Old Town	111,883	—	51	41	—	6	—	—	15	—	113	10·5	—	2	—	9	5	—	—	—	2	18	1·7	210	19·6	138
Poplar	169,811	2	72	65	—	8	—	—	31	—	178	10·2	—	1	—	7	7	—	4	—	—	19	1·2	290	17·8	134
South Districts.																										
St. Saviour Southwark	24,919	—	13	3	—	1	—	—	2	—	19	8·0	—	—	2	—	2	—	1	—	—	5	2·1	50	20·9	200
St. George Southwark	60,388	—	22	9	—	—	—	1	5	—	37	6·4	1	—	—	2	2	—	—	—	—	5	0·9	125	21·6	130
Newington	122,191	—	44	23	—	3	—	2	14	—	86	7·3	—	2	4	3	19	—	1	—	8	37	3·2	258	22·0	113
St. Olave Southwark	11,480	—	4	3	—	—	—	—	2	—	9	8·2	—	—	—	—	1	—	—	—	1	2	1·8	24	21·8	95
Bermondsey	85,629	—	34	32	—	5	1	—	9	—	81	9·8	—	—	2	9	10	—	1	—	2	24	2·9	174	21·2	146
Rotherhithe	40,643	—	8	11	—	—	—	1	4	—	24	6·2	—	2	—	1	5	—	—	—	1	9	2·3	75	19·5	210
Lambeth	300,018	—	97	64	—	16	3	—	20	—	140	6·6	—	6	3	14	28	—	5	—	4	60	2·1	503	17·5	140
Battersea	168,877	—	98	36	—	4	—	—	23	—	161	9·9	—	1	5	5	5	—	1	—	2	19	1·2	256	15·8	140
Wandsworth	195,612	—	78	94	—	9	2	1	27	—	211	11·3	—	1	—	26	4	—	—	—	1	34	1·7	258	13·8	110
Camberwell	257,575	1	94	99	—	10	—	—	26	—	230	9·3	3	—	1	16	18	—	2	—	2	42	1·7	393	15·9	111
Greenwich	178,367	—	67	61	—	15	—	1	23	—	167	9·8	—	1	2	8	1	—	5	—	1	18	1·1	275	16·1	142
Lewisham (excluding Penge)	86,152	—	26	15	—	4	—	—	11	—	56	6·8	—	—	1	6	1	—	—	—	—	8	1·0	109	13·2	114
Woolwich	41,409	2	5	11	—	2	—	—	2	—	22	5·5	—	—	—	3	2	—	—	—	3	8	2·0	74	18·6	163
Lee	39,215	—	5	10	—	2	—	1	5	—	23	6·1	—	—	—	2	—	—	—	—	—	2	0·5	49	13·0	128
Plumstead	61,057	—	24	5	—	1	—	—	4	—	34	5·8	—	—	1	1	—	—	—	—	1	3	0·5	76	13·0	109
Port of London	—	—	5	2	—	—	—	—	1	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 41 cases of membranous croup.

† Including deaths from membranous croup.

marked excess in any of the sanitary areas. The 63 fatal cases of diarrhœa were within 4 of the corrected average number. In conclusion, it may be stated that the mortality in London during March from these principal zymotic diseases was more than 33 per cent. below the average.

Infant mortality in London, measured by the proportion of deaths under one year of age to births registered, was equal to 130 per 1000 during March, and was below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in Hammersmith, Westminster, Hampstead, and St. Olave Southwark; and the highest rates in St. Giles, Strand, Holborn, St. Saviour Southwark, and Rotherhithe.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-LIEUTENANT-COLONEL I. B. EMERSON assumes temporary Medical Charge of the troops at Ipswich during the absence on leave of Deputy Surgeon-General W. A. Gardiner. Surgeon-Major S. F. Loughead will shortly join at Woolwich. Surgeon Captain M. J. Whitty proceeds to Hong-Kong. Surgeon-Colonel W. Graves has been appointed Principal Medical Officer of the Belfast District.

INDIA AND THE INDIAN MEDICAL SERVICES.

The following retirements are announced:—Brigade-Surgeon-Lieutenant-Colonel Hugh Johnstone (Bengal), Civil Surgeon and Port Health Officer, Rangoon, and Surgeon-Lieutenant Alfred Moore (Madras), both subject to Her Majesty's approval.

NAVAL MEDICAL SERVICE.

The following appointments are announced: — Fleet Surgeon J. C. B. Maclean to the Royal Marine Depôt, Walmer. Staff Surgeons: J. D. Henwood to the *Revenge*; Thomas E. H. Williams to the *Empress of India*; and M. O'Connell M'Swiny, lent to the *Hibernia*. Surgeon Sidney T. Reid, lent to the *Barfleur*.

CHARCOAL DRESSING IN MILITARY SURGERY.

In a small pamphlet issued by the Publishers' Printing Company, New York, Dr. S. Sherwell of Brooklyn claims to be the introducer of charcoal as a dressing for open wounds in field surgery. According to Dr. Matignon of the French army this method was originally devised in 1891 by a Japanese military surgeon named Kikuzi, but ten years previously, at the International Medical Congress in London, Dr. Sherwell read a paper advocating "the instant envelopment of wounds ..... in a sack or bag of charcoal, finely pulverised." It does not appear, however, that Dr. Sherwell ever reduced his theory to practice, whereas the results obtained by Kikuzi at Port Arthur and elsewhere, not only in gunshot and other wounds, but also in frost-bites, are said to have been strikingly satisfactory. The American claimant is of opinion that rice-straw charcoal cannot differ greatly from other charcoals, but in an editorial note to an article in a French medical journal,[1] to which he refers, some experiments are mentioned which would seem to prove that the former possesses peculiarly distinctive qualities, not only as regards softness and elasticity, but also in chemical composition. As the writer of the note in question observes in conclusion, "It is to be desired that further experiments should be undertaken, with a view to the differentiation of the various straw charcoals."

LEAN'S ROYAL NAVY LIST.

The latest issue of this indispensable publication is to hand and will be cordially welcomed by all who have anything whatever to do with our first line of defence. The information which has been brought up to date includes among other matters the war and meritorious services &c. of the officers of the Royal Navy and the Royal Marines; the dates of all commissions; dates of birth (flag officers, captains, and officers of Royal Marines), together with medals, clasps, honours, decorations, and rewards; famous battles against the names of the ships; the details from official sources of the gallant deeds for which the Victoria Cross, Albert Medal, and medals of the Royal Humane Society, Lloyd's Shipwrecked Mariners' Society, Liverpool Shipwreck and Humane Society, and Royal National Life Boat Institution have been awarded; appointments held by retired officers; causes of special promotions; fellows of the learned societies, and deputy lieutenants.

[1] Archives de Médecine et de Pharmacie Militaires, No. 5, May, 1896, p. 386.

Correspondence.

"Audi alteram partem."

THE QUESTION OF THE SECOND OVARY IN OVARIOTOMY.

To the Editors of THE LANCET.

SIRS,—The operation of ovariotomy, requiring little anatomical knowledge, I have always inclined to rank as one for which little surgical training was requisite. Its former reputation depended entirely on the terrible mortality that in years gone by attended the earlier operations, so that a certain amount of courage was necessary in order to undertake it. Great credit was therefore due to those who, by greater attention to aseptic methods and detail, brought the operation to the present degree of safety. Whilst from a surgical point of view a little coolness and courage with a very limited knowledge of the human body are all that are requisite for an ordinary case, it is nevertheless an operation which requires a large amount of common sense in dealing with adhesions and with complications that may be met with.

The question which will interest a great many at the present time will be the rule of the profession in dealing with the second ovary if in an early condition of disease; and without wishing to press strongly my views (which others may regard erroneous) I will state what with me have been the determining factors in practice. In the case of malignant disease no one would, I presume, hesitate to remove every particle of growth it was possible to clear away, so that opinions could scarcely differ if, on removing one ovary which was malignant, a nodule of growth was discovered on the other. Both should be removed. With simple cystic disease, where one ovary is extensively diseased and the other only in an early stage of cystic degeneration it would appear to me that the patient's age and condition of life must be the determining factors. It would, I believe, be generally conceded that with one ovary remaining, and that in a state of partial cystic degeneration, not only would menstruation be continued, but the possibility of impregnation and child-bearing (at any rate, for a time), for corpora lutea are to be found in the undegenerate portion. If both ovaries are removed, however healthy a prospect of life may be thus secured, the woman from that time forth is an unnatural monster, cut off from the next generation, and, if married with this condition secreted, would, I presume, be liable to be divorced. It has twice happened to me recently to be face to face with this position and I acted differently in the two cases. One was a patient under the care of Mr. George Flower of Yeovil. She was in her fortieth year and had had no child for many years. After removing a very large ovarian tumour from one side I found the other in an earlier stage of cystic degeneration. I removed both, telling her afterwards that she could not again become pregnant and that she would be relieved of the inconvenience of menstruation. The other case was a patient under the care of Mr. Challoner Clay of Fovant, Salisbury. She was only twenty-five years of age and was found to have a large unilocular cyst of her right ovary, which contained ten pints of fluid, and connected with the left ovary was a cyst as large as an orange. The right ovary was easily removed and the other was left. The view I took in this case was that at her time of life I had no right to cut her off from the chance of matrimony and of child-bearing. The remaining ovary was not likely to endanger her life for a considerable period, and in the meantime it might be possible for her to become a mother. Should the cystic degeneration increase rapidly there would probably be no great danger in operating a second time for the removal of the remaining ovary.

I am, Sirs, yours faithfully,

R. CLEMENT LUCAS, B.S. Lond., F.R.C.S. Eng.,
Surgeon to Guy's Hospital.

Wimpole-street, W.

"RIGHT-HANDEDNESS."

To the Editors of THE LANCET.

SIRS,—Professor Struthers' letter in THE LANCET of April 17th affords an excellent illustration of a fact to which I lately drew your attention[1]—namely, that in medical

[1] THE LANCET, April 3rd, 1897.

† Including deaths from membranous croup.

* Including 41 cases of membranous croup.

literature one constantly meets statements implying a belief that acquired characters are transmissible. Professor Struthers says: "On the hypothesis of unity of origin" (of the races of mankind) "the explanation of right-handedness is easy. One hand would naturally be fixed on; the young would be trained to use the same hand; and the influence of that on the left hemisphere of the brain would ere long give a hereditary or 'instinctive' tendency to prefer the right hand." It appears to me that this "easy" explanation involves an impossible assumption, and one which at the present day is very generally disputed by biologists. Will Professor Struthers explain how modifications *acquired* by the left hemisphere of the brain of the parent can so affect the germ cell—in which there are neither nervous nor muscular tissues—that, after long separation from the parent organism, it (the germ cell) will proliferate into an individual who is right-handed—i.e., who has inborn the peculiarity the parent acquired? Surely that part of Professor Struthers' explanation in which he says, "One hand would naturally be fixed on; the young would be trained to use the same hand," is all-sufficient, and there need be no appeal to what is practically a miracle. No one excepting those who have given special attention to the subject have any conception of how very much of the physical and mental parts of every man is individually *acquired*, and is therefore not inherited or transmissible in the biological sense, and none but those who have so studied the subject have any conception of how vast is its importance, not only to the student of disease and the biologist, but also to the sociologist, the philanthropist, the statesman, &c. For example, every man individually *acquires* the faculty of language and of bi-pedal progression in an erect posture; neither of these is instinctive or inborn, and therefore transmissible; and both result from the fact that the one generation acquires them by imitation from the preceding generation. It is probable, therefore, that most men are now right-handed merely because they acquire or learn this peculiarity from their elders, not because they are born with it. Professor Struthers himself says: "The preferential use of the right hand does not, according to my observation, show itself in very young children, but only after they have assumed the erect posture and begun active exertion."

I am, Sirs, faithfully yours,

Southsea, April 19th, 1897. G. ARCHDALL REID.

To the Editors of THE LANCET.

SIRS,—Professor Struthers and I seem to afford each other mutual support. While I seek to show that (owing to the centre of gravity of the thorax being nearer the left fore limb than the right) our remote fore-footed ancestor and the crawling child would tend to use the right hand in preference to the left, Professor Struthers maintains that the visceral preponderance over the right leg of the *erect* man would tend to produce the same result. It appears, therefore, that both before and after attaining the erect position visceral preponderance makes for right-handedness. With regard to the feet, I would point out that the drill-sergeant and dancing-master traditionally insist on commencing to march or dance with the *left* foot, the reason being that the stability of the body, owing to visceral preponderance, is less disturbed by taking the left foot off the ground than the right. Left-handedness seldom shows itself so long as movement is mainly coarse and bilateral, but is noticed as soon as a child begins to use a spoon or a pen. Small degrees of hemiplegia are far from uncommon in young children (owing to slight damage to the cerebral cortex during birth), but the trifling disability of one hand is seldom noticed by the friends until the child begins to use the hands independently. I have seen many such cases. In all cases of so-called "writer's cramp" I am accustomed to inquire for "left-handedness" and to look for evidence of congential or infantile cortical lesions, and I have notes of several cases in which the evidence of such lesions, though slight, was complete. I have records of two cases of extreme left-handedness, in which the left arm was broken in childhood and was consequently carried in a splint for some weeks. This, however, did not in either case cure the left-handedness. I have notes of another case in which the right half of the body—face, limbs, and trunk—was obviously smaller than the left half, but the patient was not in the least left-handed. That there must be an anatomical cause for our almost universal right-handedness is certain, but the exceptional left-handedness may obviously be due to a variety of causes. One may be allowed to speculate as to whether people are ever ambi-dextrous (i.e., whether a left hand is ever equal to a really first-rate right hand). That the preferential use of the left hand is often due to a congenital cortical lesion I have no doubt and it may be that such persons have two second-rate hands instead of one first-rate hand.

I am, Sirs, yours truly,

Wimpole-street, April 20th, 1897. G. V. POORE.

THE PERIPHERAL ORIGIN OF SOME SPINAL CORD AFFECTIONS.

To the Editors of THE LANCET.

SIRS,—The question of the possible peripheral origin of some spinal cord affections is raised by the interesting communications from Dr. Semple and Dr. Taylor in THE LANCET of April 17th, "On Certain Symptoms of Spinal Cord Affections in Bicycle Riders." May I be permitted to call attention to a paper of mine entitled, "On the Etiology of Some of the System Diseases of the Spinal Cord,"[1] in which I put forward the view based partly on probability and partly on grounds of observation of the possible peripheral origin of some of these diseases? Dr. Semple and Dr. Taylor say of their cases that "it is not unlikely that in all of them there was produced, presumably through pressure, some condition of the nervous structures possibly analogous to that which obtains in pressure palsy," and "that it is possible that in the case in which the spinal cord became much involved the condition became an actual neuritis, and that the inflammation spread so as to set up a similar process in the spinal cord." In my paper to which I allude I endeavoured to show the likelihood of many cases of so-called lateral sclerosis, as also of posterior sclerosis (or "tabes"), being due to over-use of the motor and sensory apparatus, and suggested that affection of the peripheral nerves might spread to the cord. There are many corrections, additions, and omissions that I should like to make with respect to my crude paper on this matter, written so long ago, but my experience of late years goes to corroborate the view that a large number of cases of both pure and mixed examples of "spastic paralysis" and "tabes" are with the greatest clinical probability etiologically referable to over-use or irritation of peripheral nerves terminating in either skin or muscle.—I am, Sirs, yours faithfully,

London, April 19th, 1897. H. B. DONKIN.

"LACTOSURIA."

To the Editors of THE LANCET.

SIRS,—I have read with interest the article on this subject in THE LANCET of April 17th. Although the occurrence of sugar in the urine during lactation was described by various writers as being frequent, yet on investigating the literature on this subject I was unable to find that any prolonged and careful inquiry had been made. In conjunction with Dr. W. A. Turner I investigated a series of 100 cases[2] in order to answer the initial question, Is sugar always present in the urine of nursing women at some period of lactation? This question we were enabled to answer in the affirmative. In addition to the examination of the urine a daily note was made concerning the condition of the mammary glands, the quantity and quality of the milk, and the sucking and general nutrition of the child. As a result of our observations we concluded: 1. That sugar is present in the urine of women during lactation. 2. That sugar is present at some period in every case. 3. That in the majority of cases the largest amount occurs on the fourth and fifth days of the puerperium. 4. That the quantity depends on (*a*) the condition of the breasts; (*b*) the quantity and quality of the milk; and (*c*) the sucking of the child. Out of 100 cases the average quantity found was 0 35 per cent.—i.e., 1½ grains per ounce. 5. That when lactation is diminished or suppressed the amount of sugar diminishes or disappears. 6. That when the production and exhaustion of the milk are equal the amount of sugar is very small.

The suggestion that the quantity of sugar present in the

[1] Published in the volume of Brain for 1883.

[2] Transactions of the Obstetrical Society of London, vol. xxxiv., 1892, p. 473.

urine is an indication of value in choosing a wet nurse was made by Blot[3] in 1856. With this suggestion we could not agree, for in cases where large quantities of lactose were present in the urine the nutritive value of the milk, as gauged by the nutrition of the child, was inferior. The milk may be rich in lactose, yet poor in nutritive value, or for some reason more lactose is absorbed and excreted. It is important to remember that the larger amounts of lactose are found at the onset of lactation or at its cessation, especially where weaning has been recommended, as a certain amount of breast distension usually occurs.

I am, Sirs, yours faithfully,

Curzon-street, Mayfair, W., April 19th, 1897. F. J. MCCANN.

"SHOULD EPILEPTICS MARRY?"

To the Editors of THE LANCET.

SIRS,—Sexual reproduction with its natural variations is as inadequate as Dr. Campbell's previous explanation of coincidence to account for the cases I recorded, nor can I accept the "dictum of an eminent biologist" when it is opposed to a plain matter of fact. Dr. Campbell's doubt of the transmission of gout is contrary to all experience, his explanation of inherited baldness savours too strongly of the *virtus dormitiva* to be intelligible, his argument of circumcision and the docking of horses needs to be viewed in the light of the functional insignificance of the parts docked, and the proneness of the transplanted negro to tubercle has been otherwise explained, but it does not bear on this question.

Dr. Reid dismisses the theory of pangenesis, adopts the view of Weismann, and says "the germ cell, so far as we know, is indebted to the other cells only for shelter and nutrition. This consideration renders unbelievable the hypothesis that acquired traits are transmissible." Even allowing him so to beg the question of the limited dependence of the germ cell, "so far as we know"—and we know nothing whatever about it—this consideration does nothing of the sort. If the germ cells depend for shelter and nutrition on the other cells they are therefore as liable to modification by them as any organism is to the influence of its surroundings. The crabs and other animals that made their home in such caves as those of Kentucky depended for shelter and nutrition on their surroundings no more and no less than the blastogenic cells depend on their surrounding cells. Through disuse of their eyes for successive generations they finally lost those organs, and we find the crab in which "the footstalk of the eye remains, though the eye is gone." Now, does any sane person contend that such a result is a coincidence, or is it a natural variation of sexual reproduction, or is it a proof of the continuity of the germ plasm? It is, of course, an example of the same process of heredity, though slower in operation, that is at work in those cases of the transmission of the results of lesions that I have recorded.

The attitude of those who follow Weismann's theory is well illustrated by your extract from Dr. Pearse's communication; they have accepted a hypothesis, and if the facts will not tally with it, then so much the worse for the facts. There is no mere hypothesis under the sun that is sufficient to justify us in concluding *a priori* that acquired lesions *cannot* be transmitted. Surely the more scientific method would be to investigate cases of transmission, and then to frame a hypothesis that will tally with established facts.

I am, Sirs, yours faithfully,

St. John's Wood-park, N.W., April 3rd, 1897. W. G. THISTLE.

*** This correspondence must now cease.—ED. L.

"THE MIDWIVES REGISTRATION BILL."

To the Editors of THE LANCET.

SIRS,—The hopeless muddle into which the promoters of midwife registration have fallen must be my apology for again trespassing on your space in order to supplement my note appearing in THE LANCET of March 27th. The time for academic discussion and for destructive criticism and personal recrimination is past, and the public, Parliament, and the medical profession, or that part of it, at least, who take any interest in the subject, anxiously look for a solution. This is not to be found in the Bill now before the Commons: (1) because it will register the *bonâ-fide* midwife of two years' standing—i.e., the "Gamp" and other untrained and ignorant women who practise midwifery and, according to the medical advocates of registration, scatter disease and death broadcast; this alone would condemn the Bill; (2) the Bill makes no provision for after-nursing, which is a fatal defect if its promoters intend it to apply to "the poor"; (3) there is no provision for medical or surgical aid in emergencies or for the payment of medical men or midwife in such cases occurring among "the poor"; (4) its administration is utterly at fault, as a central board largely composed of specialists know absolutely nothing of local wants and circumstances; and it is manifestly unfair and impolitic to thrust police duties on the medical officer of health or other medical man, whose office, under the Bill, as detective, spy, and informer would be invidious and degrading. Thus, while the Bill would intensify all the existing evils it would (5) sow discord among male and female midwifery practitioners, promote slander and backbiting, and to a large extent deprive the poor of the prompt assistance and sympathy of medical men, whether they are paid or not, and which is denied them by the qualified midwife unless her fee is paid in advance. It is absurd to say, as the promoters express it (*vide* the *Times*, Feb. 26th), "that the midwife must always stand entirely outside the medical profession." On the contrary, when registered she will be an integral part of it, and severely compete with fully qualified medical men, while she is dependent upon them in cases of difficulty and emergency. This must strike the most obtuse as grossly unfair. The promoters of registration give away their case in the following sentence (*vide loc. cit.*): "The utmost that is proposed or could be done is to regulate the practice of those who take the name of midwife; nothing will or can prevent *any person* whatever from practising in this capacity. We demand that the *name* of midwife shall be protected, and shall be *in itself* a guarantee that the bearer of it is competent for the work she undertakes!" In the *name* of common sense, what does the poor woman whose slender means are not equal to a fee of more than 5*s*. or 7*s*. 6*d*. at the outside care for a diplomated and registered midwife, clad in gown and ribbons, who requires another woman to wait upon her and to do the housekeeping, washing, and cooking? And if "any person" can practise midwifery under the registration Bill, how will this meet the case of its medical supporters, who look to it to abolish puerperal fever and the grievous maladies due to the practice of midwifery by the incompetent? The scheme of the Bill, as I said in my former letter, stands "self-condemned," and we must seek for a better.

Having had the midwife question under my observation for nearly five years in the parish of East Sheen, and having regard to the abuses which gradually crept in under the ægis of catering for "the poor," who were at first required to pay only 5*s*, then 7*s*. 6*d*., and with an increase of the wage limit from 30*s*. to 50*s*. per week an enhanced fee of 10*s*., and finding the comparatively rich taking advantage of the midwife's fees and "the poor" left very much to their own resources, I took action in order (1) to have the wage limit reduced again, and in this I succeeded; and (2) to put forward "a scheme" which was intended to meet the requirements of the working and small shop-keeping classes and at the same time to make an honest effort to solve the midwife question to the advantage of the public, the profession, and the midwives themselves. This was done publicly at the annual meeting of the Local Nursing Association (who employ a professional nurse and a diplomated midwife) on Feb. 4th. The vicar was chairman and about forty representatives of the *élite* of the parish were present, and after full discussion and subsequent examination of my proposals in committee they wrote: "The committee authorise me to say that they consider the changes quite impracticable; the class of women whom it is desired to help could not possibly pay for both doctor and nurse. The result would be that they would employ neither, and would revert to the unskilled though kindly meant help of their neighbours. This is exactly what the society desires to avoid." It is none the less what I desire to avoid, as will immediately appear. But the promoters of registration should carefully note the terms employed and the contention of the local society, as these are distinctly adverse to the principle of the Bill, which registers the "Gamp" and recognises the "friendly neighbour." The local committee, however, recognised the injustice of a 50*s*. wage limit, which in two years had reduced the midwifery practice of the medical men from 50 to 60 per cent., and the

[3] Comptes Rendus, xliii., p. 676, 1856.

limit is now 30*s*. My proposals were made for a parish of 7000 odd, and for an average birth-rate of 180, and if sound should be generally applicable. These are divided for comparative purposes into three sixties: First sixty (wages from 30*s*. to 40*s*.) to contribute 15*s*.; second sixty (wages from 20*s*. to 30*s*.) to contribute 10*s*; and third sixty (wages 20*s*. and under) to contribute 5*s*. (1) The patients to find their own nurses, or contribute towards a trained nurse's salary; (2) the "destitute" to be attended under Poor-law as at present; (3) an honorarium of 5*s*. to be added to each of the above contributions, making medical men's fees 20*s*., 15*s*., and 10*s*. respectively, or an average of 15*s*. each; (4) all resident medical men who practise midwifery to be on the staff and the women to choose their own medical man, and the medical men to be *ex-officio* members of the managing committee with monthly or quarterly meetings; (5) the present midwife to be retained as *obstetric nurse* at a reduced salary or another appointed; and (6) the obstetric nurse to act in *all* cases under medical supervision and do all that is usually done by a *monthly* nurse (except sleeping in the patient's house) should the patient desire her services.

In dealing with the cash account on the basis of the income of the local nursing association—viz., £270—I secure a balance of £135 for distribution among the medical men, after allowing a salary of £60 each to a trained sick and obstetric nurse and £15 for incidentals. Of the £270 income, £90 would be contributed by the women under the above scale, leaving £180 to be raised by subscription, donations, &c. Some rich parishes would no doubt pay their nurses more. Mortlake pays £100 per year to its sick nurse, and it is money well spent; she is a Jubilee nurse with three years' training, and is a boon to "the poor" of the parish. The Jubilee Institute send out trained obstetric nurses at salaries of from £25 to £30, but costume, laundry, and maintenance must be found for them. Every parish, however, has one or two suitable women for obstetric nursing purposes, and local training centres could be fixed for them, and their salaries would be very much less, as they would generally have a cottage of their own in country places. The Mortlake midwife is paid £80 per annum, but began at £60.

Now, if we had a Bill creating obstetric nurses on lines parallel to sick nurses in every parish in the land, and if, like many other Bills, its adoption were optional, there could be no better machinery for its administration than voluntary associations after the type of the Mortlake Association, modified as herein proposed and adapted to local circumstances. This proposed Sick and Obstetric Nurses Bill would assail no interest and would be welcomed by all, and it would open out an immense field of honourable employment for active and intelligent women with a vocation for nursing. I have already pointed out the unfairness of the proposal to create and register a class of quasi-independent midwives to compete with private practitioners of both sexes, and if there is a loss of £135 at an average of 15*s*. per case on 180 cases, it is not so difficult to calculate the loss on the annual birth-rate of the country, apart from the loss of life and health and domestic happiness.

Any Bill which fails to deal with the great mass of the "parturient poor" (and the present Bill fails woefully in this respect) will be unsatisfactory, and no Bill would be complete without a clause empowering boards of guardians, and if need be enforcing them, to contribute towards the maintenance of trained "obstetric nurses" for the poorest of the population. Sick nursing is already provided for by the Consolidated Orders, and has been taken advantage of by the Richmond board to contribute £10 per annum to the funds of the local association. The spirit of the times is against extending medical relief to any but the really "destitute," and out of a population of over 7000 I have only attended twenty such midwifery cases in four years. As things are, and as they would be under the proposed registration scheme, "the poor" would find themselves just where they are, while the trained midwife would find her practice among the patients of private practitioners. And in granting "orders" for confinement on district medical officers much less stringency should be observed by relieving officers, whose hands are tied by the legal phrase "destitute," which in practice means "wholly unemployed" or only "casually employed." Men earning £1 a week, or even more than this, and who have to support a wife and several children, can neither pay medical man nor midwife and are perforce at the tender mercy of the "Gamp" and "friendly neighbour."

I sincerely hope we are on the eve of a solution of this vexed question, and if Parliament cannot find time it may still be solved to the satisfaction of all parties on the lines indicated herein.—I am, Sirs, yours faithfully,

ALEXANDER MCCOOK WEIR.

East Sheen, March 29th, 1897.

HOSPITAL REFORM.

To the Editors of THE LANCET.

SIRS,—At a meeting of the Plymouth Medical Society on Wednesday, April 14th, the following resolutions were carried:—

1. That this meeting, although not pledging itself to the particular recommendations of the Hospital Reform Association, approves of its principles.

2. That a recommendation be sent to the committees of the various hospitals, dispensaries, &c., of the three towns asking them to appoint an investigation committee, whose duty it shall be to inquire into the circumstances of the persons applying for relief, and, if they find it necessary, to appoint an inquiry officer, and so limit the assistance given to the necessitous poor only.

I am, Sirs, yours truly,

W. L. WOOLLCOMBE, Hon. Sec.

The Crescent, Plymouth, April 19th, 1897.

"RECORDS OF FATALITIES UNDER ANÆSTHETICS."

To the Editors of THE LANCET.

SIRS,—Under this heading in THE LANCET of April 3rd you refer to a case which occurred in the Parish Infirmary, Liverpool, and as I happened to be the anæsthetist on that occasion I take this opportunity of informing you that there was *no* anæsthetic of any kind administered *after the patient first showed signs of collapse*. Trusting you will excuse delay,

I am, Sirs, yours faithfully,

THOMAS HENRY MOYLES,
Resident Medical Officer.

Parish Infirmary, Liverpool, April 13th, 1897.

THE NEW KOCH TUBERCULIN.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow us to inform your readers through your columns that we are now in a position to supply the new Koch Tuberculin, having received a consignment from the works? Thanking you in anticipation,

I am yours truly

(Pro Farbwerke vorm. Meister, Lucius, and Brüning),

St. Mary-axe, E.C., April 15th, 1897. F. DIXON.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Queen's Diamond Jubilee.

THE Lord Mayor's committee for the permanent commemoration of the Queen's Diamond Jubilee have decided by a majority which was by no means overwhelming to commemorate that auspicious event by the erection within the city of a central nursing institution for nursing the sick poor in their own homes, with a view to it becoming a training centre in the North of England. Another proposition, which obtained the support and sympathy of the working-class representatives on the committee, advocated the erection of a central People's Hall in the city, where the working classes could meet in social intercourse and also transact the business of their societies, tontines, &c.; in fact, to serve as a huge club for their benefit. Mr. W. P. Hartley advocated the adoption of both schemes, and with his customary liberality and large heartedness offered to contribute £500 towards each of these worthy objects. Mr. William Rathbone strongly urged the claims of a nursing institution, and submitted that one hall would be of little use, but that several would be needed to meet the requirements of the working classes from all parts of the city, a provision which he believed before long would be made conjointly by private beneficence and the City Council. On the other hand, there were many reasons for making Liverpool a centre for extending and completing the system of nursing the poor in their own

homes. In the first place it was essentially a Liverpool scheme, the district nursing system having originated in Liverpool. Within five years of its establishment the whole city was divided into districts in charge of ladies and nurses. As it now existed, even in Liverpool, the system was imperfect. Moreover, this was the method of commemoration which the Queen herself preferred. He felt sure that a central hall would not be one-tenth part of the benefit to the working classes. A proposition to adopt both schemes was rejected by a majority of five. The number of district nurses now engaged in nursing the sick poor of Liverpool in their own homes amounts to twenty-two.

Sanitary Science Classes at University College, Liverpool.

The arrangements for the lectures and demonstrations on Sanitary Science to be delivered at Ashton Hall, University College, in conjunction with the technical classes under the city council at the Liverpool School of Science, are now complete. They have been especially designed for persons desirous of qualifying as sanitary inspectors, but are also open to all interested in sanitary science, such as teachers, lecturers, builders, foremen of works, surveyors, architects, and others. The laboratories in University College are thoroughly equipped for the more advanced study of hygiene, bacteriology, and diseases of animals, and are under the supervision of the Professors of Pathology and Hygiene. A museum has been formed in connexion with them which contains an increasing collection of diseased animal tissues and of models illustrative of the various sanitary appliances and methods; in fact, it will become the Parkes Museum of Liverpool. The corporation have given a grant of £90 towards the purchase of apparatus, and also a yearly grant for evening lectures. The classes will be under the management of a board consisting of representatives of the city council and University College. Candidates for the sanitary certificates of the Victoria University are required to devote at least two years to their course of training. At the end of the first year they are required to show a competent knowledge of elementary physics and elementary hygiene, and will also receive credit for a knowledge of elementary inorganic chemistry, of mensuration, and of free-hand drawing. The examination at the end of the second year will comprise sanitary law, sanitary engineering and appliances, objects and methods of inspection of nuisances, food inspection, and methods of disinfection. The Victoria University examination for certificates of sanitary knowledge will be held in July in each year. The fee for the ordinary examination and certificate is £2 2*s*.

Sanitary Inspectors' Association.

The tenth annual meeting of the North-Western and Midland Sanitary Inspectors' Association was held on the 10th inst. in the Royal Institution, Liverpool. The following appointments for the year were made:—President: Mr. Francis Vacher, medical officer of health, Cheshire County Council. Vice-presidents: Dr. E. W. Hope, medical officer of health, Liverpool; Mr. Edward Sergeant, medical officer of health, Lancashire County Council; Dr. William Carter, Liverpool; and Dr. George Reid, medical officer of health, Staffordshire. Chairman of Council: Mr. William Urquhart. Hon. Treasurer: Mr. N. Coates, Liverpool. Hon. Secretary: Mr. H. H. Spears, Waterloo.

April 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Glasgow University.

THE graduation ceremony formally closing the winter session took place on the 13th inst. The honorary degree of LL.D. was conferred upon six gentlemen, including Surgeon-Major-General James Jameson, M.D. Glasg., Director-General of the Army Medical Department, and Professor Ramsay, F.R.S., University College, London. Surgeon-Major-General Jameson is an alumnus of the University, where he took his medical degree in 1857; Professor Ramsay is also an alumnus of the University and was assistant to the Professor of Chemistry until 1880, when he was appointed to the Chair of Chemistry in University College, Bristol. Six gentlemen received the degree of M.D. To two of these "commendation" was awarded—viz., to William W. Don, M.B., for his thesis on "Thyroid Therapeutics" and to Walter King Hunter, B.Sc., M.B., for his thesis, "A Contribution to the Etiology of Beri-beri." The class medals in the Faculty of Medicine have been awarded as follows: Midwifery, Samuel S. Sloan; Materia Medica and Therapeutics, Alexander Laurie Watson, M.A.; Medicine, William K. Hutton, M.A.; Clinical Medicine, John Crow, Robert Nelson, and Alexander Wilson; Surgery, William Martin, M.A., B.Sc., and James A. Mitchell; Clinical Surgery, William Martin, M.A., B.Sc., James Rankin, B.Sc., James A. Mitchell, and James Davidson, M.A.; Physiology, James C. Rose and Andrew Mair; Anatomy, John M'Gilchrist and Alexander Munro; Zoology, David Kyle; Chemistry, Alexander V. Lothian, M.A.; Pathology, Robert Fullarton, M.A.; Physics, William M. Brown; Diseases of the Ear, George Clark and William Webster; Diseases of the Throat and Nose, James D. Cochran. Principal Caird presided at the ceremony and delivered an address dealing with the influence exercised by a university education. The summer session for the medical classes opened to-day. Professor Simpson has obtained leave of absence on account of ill-health, and it is with much regret I hear that Professor Coats is so unwell that he cannot be expected to conduct the class of practical pathology during the present session.

Glasgow Hospital Sunday.

The committee in their annual report announce that the total sum collected last year was £4342 17*s*. 4*d*., being an advance of £273 15*s*. 4*d*. on the preceding twelve months. In addition, the committee acknowledge the receipt of £8204 7*s*. 6*d*. from the trustees of the Guesdon bequest. Both sums have been divided among the three general hospitals.

Medical Appointments.

Mr. Peter M'Bryde, M.B., C.M. Glasg., has been appointed physician for diseases of women in the Glasgow Central Dispensary; Mr. C. O. Hawthorne, M.B., C.M. Glasg., has been appointed examiner in physiology to the Conjoint Board for Scotland (triple qualification); Mr. J. Grant Andrew, M.B., C.M. Glasg., and Mr. T. W. Jenkins, M.D. Glasg., have been elected assistant surgeons to the Victoria Infirmary, Glasgow; and Dr. Leitch has been unanimously elected chairman of the Gourock School Board. At the recent election of a School Board in Glasgow there were two medical candidates; one of these, Mr. Archibald Sloan, M.B. Glasg., was elected, but Mr. James Erskine, M.B. Glasg., was unsuccessful.

April 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Charge of the Lunatic Poor.

THE Board of Commissioners for the General Control of Asylums for the Lunatic Poor in Ireland has been re-established as follows: Mr. Justice Holmes, Mr. Thomas Robertson (chairman of the Commissioners of Public Works), Dr. O'Farrell (inspector of lunatic asylums), Sir Francis Cruise, M.D. Dub., Mr. Charles Kennedy, and Mr. J. Malcolm Ingles.

Coleraine Cottage Hospital.

At a large and representative meeting of the inhabitants of Coleraine, held on April 13th, it was decided, on the motion of the Right Hon. Sir H. Bruce, Bart., D.L., that considering the great benefit that Coleraine has already enjoyed by the establishment of the Cottage Hospital and District Nursing Institute, the best way of commemorating the Queen's Jubilee was by raising funds so as to place the hospital on an independent basis, and to further increase its efficiency in such manner as may be deemed advisable. At the conclusion of the meeting nearly £200 were subscribed.

The Queen's Jubilee Commemoration.

In addition to what is being done in Coleraine and in Belfast (where the fund to build the new Victoria Hospital amounts now to over £78 000) to commemorate the Queen's long reign the ladies of county Down, under the patronage of Lady Dunleath (whose husband gave £1000 to the new hospital in Belfast), have formed a committee for the purpose of raising a sum of £5000 for the improvement of the County Infirmary in Downpatrick. It is proposed to build a new operating-room and better quarters for the nurses, and to make other much needed improvements, as well as to form a

permanent addition to the endowment of the infirmary. The Duchess of Abercorn is also making a strong effort to raise money to build the new County Hospital for Tyrone in Omagh.

The Funeral of Professor Townsend of Cork.

The funeral of Professor Townsend was one of the most remarkable which has been seen in Cork for a long time. The hearse was preceded by nurses from the Louth Infirmary and a large body of medical students from Queen's College. After the hearse came the immediate relatives, and they were followed by practically all the medical men in the city walking in a body. The general public were largely represented, and the floral offerings were so numerous that it was necessary to have them conveyed to the grave in a special landau. Professor Townsend took a great interest and an active part in the organised resistance of the medical profession to the encroachments of the clubs, but his action gave rise to no bitter feelings against him amongst those whom he felt it his duty to oppose.

April 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Academy of Science.

M. LANNELONGUE opened a discussion upon injuries to the skin caused by the Roentgen rays, and related a case reported by M. Sorel, who had seen two abscesses produced in the chest-wall in an adult whose thorax had been "skiagraphed." M. Lannelongue regretted that no examination of the pus from these abscesses had been made. He added that at his own hospital he had seen severe burns of the skin in children who lived in a shady courtyard, the burns being due solely to the rays of the sun reflected from the sandy floor of the yard. In solar light there were, he said, trophic rays, which, like the x rays, produced profound chemical changes in the cell. Mr. William Crookes, F.R.S., was present at the meeting and asked the permission of the president to say that he had never seen any case of burns from x rays, although he had been working for a long time with skiagraphic apparatus. He considered that individual disposition must play a great part in their causation. M. Remy and M. Contremoulins, who have obtained interesting results by photographing organs, the vascular network of which had been injected with saline solution, so that the skiagraphs showed all the most delicate ramifications of the vessels, brought forward a method for the localisation of a foreign body in the tissues by means of the x rays.—Among other interesting communications made to the society was a plan for treating certain nervous diseases by an electrical current interrupted according to a regular musical rhythm. The interruptions are regulated, not by an ordinary scale, but by a musical box or some other mechanical musical instrument; the current thus brings about muscular contraction with the rhythm of the measure employed, whether a waltz, a jig, or a solemn prayer. As the effects of suggestion are also brought into play most interesting indications of muscular activity are obtained.—Another experimenter, M. Cornevin, has applied the method of microbial vaccinations to what he terms "anti-alkaloidal vaccination." He heats the alkaloid ricinine, the poisonous principle of castor-oil beans, for two hours at a temperature of 100° C. He finds that he can then inject pigs with this alkaloid without giving rise to any symptoms of poisoning, and also that they become immune to a dose of pure, unaltered ricinine. Colza seeds, upon which pigs are frequently fed in the country, sometimes contain castor-oil beans which have been mixed with them, and severe cases of swine poisoning have occurred. Animals, however, vaccinated by M. Cornevin's method escape.

The Provisioning of Ships' Boats in View of Wreck.

In the case of some shipwrecked sailors belonging to St. Nazaire, M. Langlois has made an interesting inquiry into the causes of death by starvation among those adrift in an open boat after a shipwreck. As a result he demands that provisions, prepared beforehand and packed in a watertight compartment, should be carried in all lifeboats. He considers that the quantity of these provisions should be calculated exactly so as to allow for 3000 calories per man per day and two litres of drinking water. In his opinion it is because the food taken is of the wrong kind that shipwrecked men die. Fats and condensed milk are most valuable; alcohol is harmful and useless except in very small doses for its moral effect in keeping up the spirits. M. Langlois' ration for twenty-five men for ten days would weigh half a ton for solids and as much again for water. In making his calculations he has taken into account the loss of heat which a man undergoes when wet either by rain or sea water. Finally, he recommends that there should be frequent lifeboat drills. At St. Nazaire it has sometimes taken six hours to get a life-boat into the water and the crew in their places; and, in addition, the crews, though not hurried, and in broad daylight with a perfectly calm sea, have smashed four boats in letting them down.

Letters of Identification for Lunatics.

An unfortunate accident has recently occurred to a family owing to neglect of prefectoral regulations. A merchant who had begun to show signs of cerebral fatigue from overwork asked that he might undergo hydropathic treatment in the departmental asylum. He came out perfectly well, and continued his business. Two months later, on returning home one day he found a letter addressed to his wife from the prefecture and the envelope of this letter had upon it in large letters, "In the matter of the lunatic X." The unfortunate man, seeing himself stigmatised as a lunatic upon an envelope which all his business house could have read, was seized with a sudden cerebral hæmorrhage and died almost instantaneously. There has been naturally much unfavourable criticism of a system which allows of the sending of letters endorsed in this fashion by employés. The letter, it should be added, was simply a demand for the payment of a small sum still owing for the man's treatment while in the hospital.

Premature Burial.

A conference, organised by the Société Française d'Hygiène, has just been held at the Sorbonne upon the best means of preventing premature burial. Count Karnice Karnicki gave a description of his apparatus, which has been much discussed in the press. At the slightest sigh on the part of the supposed corpse air and light enter the coffin, a bell rings loudly, and a flag indicates the place of the tomb in the cemetery. Several Parisian journalists have allowed themselves to be enclosed in coffins for the purpose of experiment, but the medical profession is less enthusiastic than the public as to the merits of the invention. Mere putrefactive swelling of the corpse would probably suffice to set the apparatus in action, for the starting point of all the signals is a little button which the chest of the body would graze at the slightest movement.

Private Hospitals.

The Municipal Council of Paris has held a long discussion with regard to private hospitals and the conditions under which they should be allowed to keep open. The Prefect of Police has recognised the fact that there exists at the present time no measure of surveillance for these institutions, and asks if inspection is not necessary from the hygienic point of view, quoting the precedent that there are inspectors of madhouses. Accordingly he proposes to submit to the Council of Hygiene every application made to him for the opening of a new establishment, although the Council of Hygiene has decided to refuse reply to applications of this kind, so as to be free from all responsibility on these matters. Many fantastic propositions have been put forward by the municipal councillors for the regulation of private hospitals, among others one forbidding any *clinique* to be opened unless it is founded by former *internes* of the Paris hospitals. The Prefect of Police requires that all deaths occurring in these institutions shall be at once reported to the police.

April 20th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Italian Students in Berlin.

THE visit of Italian students and graduates announced by your Rome correspondent in THE LANCET of April 17th took place just before Easter. On April 14th a party of about 300 members of nearly all the Italian universities, including students of the different faculties, arrived here and

were cordially received at the railway station by an assemblage, including professors and students of Berlin University and the Italian Ambassador. Both Italian and German students were in academic costume, the Italians wearing caps which showed the colours of their respective faculties. The two nationalities were introduced to one another by the Ambassador, and conversation is reported to have been at first rather difficult, but was eventually accomplished by means of a mixture of Latin and French. In the evening the guests were entertained at a "Commers," and were initiated into the science of consuming large quantities of beer, for which German students rightly enjoy a great renown. An address was delivered by the Rector, Professor Hinschius, who in perfect Italian proposed the health of King Umberto; Professor Massoni of Naples replied, and in his turn proposed the health of the German Emperor. A student, Signor Tonta of Pavia University, on behalf of the visitors presented a memorial plate, which will be placed in the *aula magna* of the university. The following days were spent in visits to the buildings occupied by the different faculties. The medical men were shown over several of our great public and private hospitals, among which mention may be made of the beautiful Friedrichshain Hospital, the university laboratories, and other places of interest. In the evening Italians and Germans were frequently seen fraternising together. The visitors will in the next place proceed to Leipzig and Munich.

The Proposed Reform of the Public Health Service.

The reform of the public health service, which has for a long time been greatly desired both by the medical profession and the public, has hitherto been postponed for financial reasons, but seems now to have become an accomplished fact. A report of a meeting of the Association of Medical Officers of Health appeared in THE LANCET,[1] and in this article I gave a short account of the present organisation, mentioning as the principal drawbacks of the service, firstly, the small salary, which naturally induces the medical officers to engage in private practice, and secondly, their subordination to the administrative authorities. The Government has now ordered the appointment of a Royal Commission to meet in Berlin, consisting of medical officers of health in actual employment, all the medical and some non-medical members of Parliament and commissioners nominated by the Government. The medical papers have published the Government proposals, which are to be considered first by the Commission and afterwards by Parliament; they are substantially as follows: The appointments of medical officer of health and medical expert to advise and give evidence in the law courts, which have hitherto been held conjointly by the medical officer of health (Kreisphysicus), will henceforth be separated. The medical officers of health will have to deal with hygienic questions exclusively, whilst the law courts will have to appoint special officials for medico-legal work. The office of surgeon of a circuit (Kreiswundarzt), who acted as an assistant to the Kreisphysicus, is to be abolished; also the provincial medical boards (Provincial-Medicinal-Collegium) are to be dissolved. The new medical organisation will be as follows: The medical department of the Ministry of Public Instruction will be the central authority, and will remain as at present. In each government district (Regierungsbezirk) a district medical officer (Regierungs-medicinalrath) will be appointed, who will advise the district government in matters of public health. His special duty will be the control of pharmacies, druggists, dispensers, private hospitals, and asylums, according to the existing laws, by-laws, and regulations. He will deal with all matters of ordinary occurrence, but in questions of exceptional importance he will be assisted by the district board of health (Bezirksgesundheitsrath). This board will consist of the president of the district as chairman, the district medical officer, together with one of his subordinate officers, the director of the provincial public health laboratory, and two members of the medical profession. The board will meet whenever convened by the chairman, and in any case not at longer intervals than once a year. Each district is divided into a number of circuits (Kreis). For each of these circuits a medical officer (Kreisarzt) is to be appointed, who will be subordinate to the district medical officer. In contradistinction to the present system the Kreisarzt will henceforth be a fully-salaried Government official and will enjoy all the rights and privileges of such; he will also be entitled to a pension when he retires. He must not engage in private practice, but will be eligible for the offices of hospital physician or surgeon, medical officer of a railway, poor-law medical officer acting under a municipality, &c. He will be required to advise the head of the circuit (Landrath) and will control the licensed midwives, nurses, pharmaceutical chemists, &c., of the circuit. He will, therefore, have to travel from time to time through his circuit and to enter into communication with the local medical practitioners. In urgent cases, especially in the time of an epidemic, he will be authorised to take measures independently of the local authorities, but he will be bound to inform them of his proceedings. He will also be assisted by a board of health (Kreisgesundheitsrath) presided over by the Landrath, and composed of from six to twelve members, medical and non-medical. The duties of this board are the same as those of the district board, but are, of course, confined to the circuit. In the larger towns municipal boards of health are also to be formed, and if the town has a garrison a medical delegate from the garrison has to take part in the proceedings. The office of member of a board of health will be an honorary one, but medical men, although by law exempt from several honorary obligations—such, for instance, as the liability to serve on juries—are not entitled to refuse an election to a board of health. One of the principal innovations of the new system is the institution of provincial public health laboratories. Each province is bound to provide at its own expense a laboratory, where all the microscopical examinations, chemical analyses, and other inquiries of a like kind will be conducted according to the order of the medical officer. Hitherto such work has been done either in private laboratories or in the university laboratories or sometimes in the Imperial Health Office. The latter will, of course, continue to be consulted in difficult cases, but will no longer undertake routine work. The proposals of the Government are undoubtedly a great improvement on the present system; they will, however, be certain to undergo some alteration, both at the instance of the Commission and also in Parliament.

Bacteria in Ink.

It sometimes happens that a trifling scratch or puncture made with a pen gives rise to dangerous septicæmia. The chemical constituents of the ink which is introduced by the pen into the wound are not capable of producing septicæmia, but microscopical examination proves that the ill effects are due to the liability of ink to contain pathogenic bacteria. Dr. Marpmann of Leipzig has recently published the results of the microscopical examination of sixty-seven samples of ink used in schools. Most of them were made with gall-nuts, and contained saprophytes, bacteria, and micrococci. Nigrosin ink, taken from a freshly-opened bottle, was found to contain both saprophytes and bacteria. Red and blue inks also yielded numerous bacteria. In two instances Dr. Marpmann succeeded in cultivating from nigrosin ink a bacillus which proved fatal to mice within four days. This ink had stood in an open bottle for three months, and the inference to be drawn from the inquiry is that ink used in schools should always be kept covered when not in use.

April 20th.

[1] THE LANCET, Sept. 26th, 1896, p. 915.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Nature-study en Fête.

APRIL 14TH witnessed the twenty-fifth anniversary of the birth of the "Stazione Zoologica" at Naples, an institution which has an epoch-making record in science as the mother and the model of many other "Stazioni" of the kind, one of the latest of which is that established three years ago on the coast of Norway. The Bay of Naples, apart from its incomparable scenery, had long been known to biologists for its wealth in marine flora and fauna; and the history of its having come to be, by a sort of scientific annexation, the favourite dredging-ground of German nature-students has already been told in THE LANCET.[1] Italy, however, had to

[1] THE LANCET, May 12th, 1894: "In the Wake of the Congress."

be transformed into a united kingdom before that annexation could be made *un fait accompli*, and it was not until the spring of 1872 that the German Court and the German Government succeeded in founding the "Stazione Zoologica," which is now the resort of nature-students from all parts of the world. Its first director was the distinguished biologist who still remains its inspiring genius, Geheimrath Professor Anton Dohrn, M.D; and from the outset he was fortunate in his working staff, one of whom, Professor Ugo Eisig, is still at his post, and, indeed, took a prominent part in the recent commemoration. Even more fortunate was Professor Dohrn in his wife, who, with noble self-abnegation, sacrificed her whole marriage portion to promote the efficiency of the then infant "Stazione." How the institution has developed and expanded is now familiar history—the most significant feature about it being this: that its "Morphologisches und Physiologisches Laboratorium für Meeres-Zoologie und Botanik" is now frequented by students from both hemispheres, and that many European and Transatlantic States and seats of learning have qualified by a yearly subvention to place a "Studien-Tisch" at the disposal of representatives of their respective nationalities. Cambridge, Oxford, the Columbia University of New York, the Smithsonian Institution in Washington, to say nothing of the British Association for the Advancement of Science, are among those annual subscribers, insomuch that this "festa" was not that of Germany or Italy alone, but that of the whole world of inductive research in its most fundamental and far-reaching department. The proceedings began with the reading of congratulatory telegrams from the King of Italy (represented on the occasion by the Minister of Public Instruction, Signor Gianturco), from the Emperor William (represented by the German Ambassador von Bulow), from the Grand Duke of Saxony, the Ministers von der Bruck, Bötticher, and Bosse, the rectors of the Universities of Munich and Strasburg, the Zoological and Botanical Societies of Austria, Russia, and Holland, and of numerous other scientific bodies, European and American. First to speak was the Senator Francesco Todaro, Professor of Anatomy in the Roman University (who appeared for the Accademia dei Lincei, the Italian analogue of the Royal Society), who tendered Italy's welcome to the assembled visitors; then came Professor Eisig, who spoke for the "Stazione Zoologica" in a similar sense. He was followed by Professor Waldeyer, representing the Berlin Academy of Sciences; and after him rose the Syndic of Naples, who, in well-chosen words, presented Professor Dohrn with an illuminated parchment conferring on him the freedom of the city of Naples. The next item in the programme was the address of Vice Admiral Palumbo, who spoke for the Minister of Marine (Signor Brin) and the whole Italian navy, succeeded by his Excellency Signor Gianturco, who, in the name of King Humbert, conferred upon Professor Dohrn the Grand Cordon of the Crown of Italy, and nominated him Honorary Professor in the University of Naples. The thanks of Germany for these distinctions bestowed on a compatriot were then given by the Ambassador von Bulow, and then Professor Dohrn rose to make the speech of the occasion. In vivid language he gave an outline of the genesis, the growth, and the future prospects of the "Stazione"—its first inception in 1870-71 and its acquiring "a local habitation and a name" in 1872, when the Court and Government of Berlin endowed it, in perpetuity, with a yearly grant of 40,000 marks. Very touching were the allusions to the part taken by his young wife in the early days of the institution—a devotion which transferred itself, by a generous contagion, to every *alumnus* attached to its teaching. Repeated rounds of applause greeted him as he resumed his seat, acknowledging that his *più alto compenso* (his loftiest compensation) was the *apoteosi di oggi* (the apotheosis of to-day). After this the assembled company, among whom I may signalise a steadfast friend of the "Stazione," Dr. Wilhelm His, Professor of Anatomy in the University of Leipzig, made a round of the laboratories, the aquarium, and the unique collections of the Mediterranean flora and fauna, veritable *spolia opima* of biological science. A great banquet in the evening, held at the West-End Hotel, concluded the programme of a memorable day—memorable not only in the annals of research, but in the record of that international brotherhood which it is one of the subsidiary, but none the less important, functions of science to deepen and extend.

Tragic Incident at Bologna.

Professor Augusto Obici, who recently came from Modena with the highest reputation to fill the chair of Pathological Anatomy in the University of Bologna and had delivered his inaugural discourse to a delighted audience of students and professional colleagues, has committed suicide by throwing himself from the Aposa bridge into the river beneath, a distance of a hundred feet. Death was immediate. Professor Obici was just thirty years of age and had been suffering from profound neurasthenia.

April 17th.

Obituary.

CHARLES HIGATT TENCH, B.A., M.D. DUB., L.R.C.S. IREL., L.M.

THE death of Dr. C. H. Tench of Reading is announced, the deceased having been suddenly struck down by an attack of cerebral hæmorrhage upon April 9th. He was in his fortieth year and had been in practice at Reading for some fifteen years, being at the beginning of his career in partnership with his cousin, Dr. Phillips Conn. He afterwards set up in practice for himself in Oxford-road, Reading, and gained the esteem and affection of all with whom he came in contact. The funeral took place on April 13th at St. Giles's Church, and was largely attended by private friends and relatives, as well as by most of the medical colleagues of the deceased in the city and district.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The death of the following eminent foreign medical man is announced:—Dr. Schaker Sakaki, Extraordinary Professor of Psychiatry and Nervous Diseases in the University of Tokio, from a laryngeal affection, at the age of forty-one years.

Medical News.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Second Examination for the degree of Bachelor in Medicine at the College of Medicine, Newcastle-upon-Tyne, in April, the following candidates satisfied the examiners:—

Anatomy, Physiology, and Materia Medica.—Second-class Honours: Herbert George Harris, St. Bartholomew's Hospital; Claudia Anita Prout Rowse, London School of Medicine for Women; Solomon Cross and Maurice Jacobs, College of Medicine, Newcastle-upon-Tyne; Selina Fitzherbert Fox, London School of Medicine for Women; Robert Walker, St. Bartholomew's Hospital; Hedda Alström, London School of Medicine for Women; Francis Ward Crossman, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital, and Harold Robert Dacre Spitta, St. George's Hospital. *Pass List:* Laurence James Blandford, College of Medicine, Newcastle-upon-Tyne; Edleston Harvey Cooke, St. Thomas's Hospital; George Oswald Morrell Dickenson, Henry Eggleston, Harold Ferens, Charles Thomas Holmes, and Ernest Inman, College of Medicine, Newcastle-upon-Tyne; Margaret Joyce, London School of Medicine for Women; Ernest George Klumpp and Gilbert Smith, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Eliot Swainston, Fred Stuart, Edward Norman Threlfall, and David Henderson Weir, College of Medicine, Newcastle-upon-Tyne; Frederick Day Welch, Guy's Hospital; and Edgar Sheldon Wilkinson, St. Bartholomew's Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Budapest:* Dr. Alexander v. Korányi has been appointed Extraordinary Professor of Internal Medicine; Dr. G. Fodor, Dr. B. Imrédy, and Dr. F. Tauszk have qualified as *privat-docenten* of Internal Medicine, and Dr. G. Rigler as *privat-docent* of Hygiene.—*Jurieff (Dorpat):* Dr. Wilhelm Koch, Professor of Surgery, is about to retire, thus still further diminishing the remaining body of German professors, who are being rapidly replaced by Russians.—*Ghent:* Dr. F. van Imschoot has been appointed Extraordinary Professor of Clinical Surgery.—*Kazan:* Dr. J. Praxin has been appointed Extraordinary Professor of Surgery.—*Lemberg:* Dr. L. A. Gluzinski has been appointed Professor of Internal Medicine.—*St. Petersburg Military Medical Academy:* Dr. J. B. Pavloff has been appointed Professor of Physiology; Dr. Michailoff, Assistant in Professor Sirotinin's clinic, has qualified as *privat docent* of Internal Medicine.—*Tomsk:* Dr. Romanoff has been appointed Extraordinary Professor of Pathological Anatomy.—*Strasburg:* Dr. Ernst Levy has been appointed Extraordinary Professor of Internal Medicine.—*Vienna:* For the first time a lady, the Baronin Posanner, has been admitted to the degree of Doctor of Medicine.—*Warsaw:*

Dr. W. Brodowsky, Professor of Pathological Anatomy and the senior member of the professorial staff, is about to retire.

METROPOLITAN HOSPITAL.—The annual dinner in aid of the Metropolitan Hospital, Kingsland-road, was held on March 18th at the Hôtel Métropole, the Lord Mayor being in the chair. It was stated that there was at that time a sum of about £5000 owing to tradesmen and that the building was mortgaged for £10,000. The hospital had accommodation for 160 in-patients, but the present state of the finances did not allow of more than about eighty beds being used.

PLYMOUTH ROYAL EYE INFIRMARY.—The committee of this institution have just issued an appeal for funds in order to provide a new building, the present one being inconvenient and unsuitable. The committee have the option of a favourable site at Mutley, and their architects have already prepared plans. The estimated cost of the land and buildings is about £12,000. This work, they think, would be an excellent commemoration of the sixtieth year of the Queen's reign.

UNIVERSITY COLLEGE HOSPITAL.—The annual meeting of University College Hospital was held in the institution on March 19th, Lord Monkswell presiding. It was announced that Sir Blundell Maple, M.P., had given a munificent donation of £100,000 for the purpose of re-building the hospital. None of this sum, however, was available for ordinary expenditure, and the state of the finances was a cause of much anxiety to the committee, the accumulated excess of expenditure over income having been £17,500 at the end of the year.

FOOTBALL CASUALTIES.—On the 10th inst. a member of the Stoke Club, while playing centre forward for his club a few miles out of Thame, sustained a compound fracture of his leg.—During a match between local Volunteers and Shop Assistants at Tamworth on Good Friday, a member of the former team, aged twenty-one years, received internal injuries, from which he died the following day.—In the course of a match at Bedford on Saturday last, betwen Bedford and Abercarn, two players had to be carried off the field to the infirmary, one of the Welsh three-quarters fractured his clavicle, and one of the Bedford forwards broke two of his ribs.

PRESENTATIONS TO MEDICAL MEN.—On the 2nd inst., at a complimentary dinner at Blanchard's Restaurant, Regent-street, London, Mr. Charles R. Walker, M.R.C.S. Eng., L.R.C.P. Lond., M.D. Brux., of Leytonstone, was presented with a very handsome ornamental clock as a memento of good wishes and esteem by his brother practitioners and old friends in Leytonstone and district, on the occasion of relinquishing his practice there.—Dr. R. F. Smith, on his leaving Cork, was the recipient on the 5th inst. of an address, pocket surgical case, gold chain, and writing album from his fellow-students of the Queen's College, as tributes of esteem.—Mr. A. Simpson, M.D. Edin., of Perth, received, on the 1st inst., from the members of the St. Andrews Ambulance Association, a handsome cairngorm mounted in gold bearing the inscription, "St. Andrews Ambulance Class to Dr. Simpson, 1897," as an acknowledgment of his gratuitous lectures to the class.—Mr. John Lloyd-Davies, M.R.C.S. Eng., L.R.C.P. Lond., the representative of the Dowlais Iron Company's medical staff at Penydarren, near Merthyr Tydvil, was at a public meeting on April 1st presented with an illuminated address and a purse containing forty sovereigns as a mark of appreciation of his services.—Mr. L. L. Bulkeley Williams, M.B., C.M. Glasg., of Sidmouth, on the occasion of his leaving that town, was entertained by his friends and patients at a dinner and presented with a silver punch bowl in appreciation of his services, public and professional, during his residence in Sidmouth.—The members of the St. John Ambulance class at Blagdon, Somerset, have recently presented Mr. T. Oates Halliwell, M.R.C.S., L.R.C.P. Lond., of Blagdon, with a portable galvanic battery as a mark of their appreciation of his services as honorary lecturer.—On the 8th inst. Mr. Thomas Scott Brodie, M.B., C.M. Glasg., of Houston, Renfrewshire, on the occasion of distributing the proficiency certificates of the combined ambulance classes (ladies and gentlemen), held each winter under the auspices of the St. Andrews Ambulance Association, was the recipient of a beautiful marble timepiece in recognition of the valuable services he had rendered to the classes.

EPIDEMIC OF MEASLES AT WELLS.—At the April meeting of the Wells (Somerset) town council the medical officer of health reported that 320 cases of measles had been notified during the quarter, but the outbreak was now rapidly subsiding.

ISOLATION HOSPITALS IN GLAMORGANSHIRE.—Plans have been prepared for additional isolation hospitals in Glamorganshire, and it is expected that thirteen new ones will be erected within the year, making twenty-one altogether.

THE death of a very successful quack is announced in Berlin by suicide from religious mania. He founded a sort of quack society and persuaded so many people to believe in his nostrums that he is said to have made from £6000 to £12,000 a year.

MEDICAL MAGISTRATE.—On the recommendation of the Lord-Lieutenant, the Lord Chancellor has placed Mr. Wm. Makeig Jones, of Wath-upon-Dearne, Rotherham, on the Commission of the Peace for the West Riding of Yorkshire.

WE are asked by Mr. George Stoker to state that the "Oxygen House" has been moved from St. George's-square to No. 2, Fitzroy-square, W., where demonstrations will be given on Tuesdays, Thursdays, and Saturdays at 4.30 P.M. till further notice.

THE POLLUTION OF THE RIVER DEE.—A conference representing the county councils of Cheshire, Flintshire, Denbigh, Shropshire, and Merionethshire was held recently, and a recommendation was passed in favour of forming a joint board for enforcing the Rivers Pollution Act (1876) throughout the entire watershed of the Dee.

NOTTINGHAM FREE HOSPITAL FOR SICK CHILDREN.—The annual meeting of the Nottingham Free Hospital for Sick Children was held in the Exchange Rooms, Nottingham, on April 7th, Lord Henry Bentinck, M.P., presiding. The report stated that 449 children had passed through the wards, and that there were 2292 out-patients who made over 9000 attendances. The accounts showed an accumulated deficiency of £170.

CARDIFF.—Dr. Williams, the medical officer of health of the Glamorganshire County Council, in the course of a lecture recently given at Cardiff, said that a fitting way to commemorate Her Majesty's long reign would be to establish in Cardiff an institute of preventive medicine in which bacteriological work and analyses of water and food supplies might be undertaken. The Glamorganshire County Council had lately promised £3000 for this object, and he hoped that the corporation of Cardiff might even do better.

BIRKENHEAD MEDICAL SOCIETY.—At a meeting of this society on April 9th, Dr. R. Sydney Marsden, President, being in the chair, Mr. Vacher read a paper on an Outbreak of Typhoid Fever in a large public institution, having in all about 700 inmates. From March 10th to 15th, 1896, seventeen persons manifested signs of the disease, and the inference was that they were all infected at or about the same time and probably from a common source. On inquiry it was found that a nurse attendant who had leave of absence twice a week or oftener, had complained of being feverish and unwell on Feb. 18th, and had gone home on the 26th. Following up this case it was found that it was without doubt one of typhoid fever. Attention was directed to the disposal of this patient's excreta, and evidence was forthcoming that some at least during the early days of her illness had been emptied into a contiguous ashpit. Now the pressure in the water mains at the institution was off during the night, and one of the hydrant boxes was in front of the room in which this patient was located. The position of this hydrant box was at the side of the road on which ashes from the ashpit had been spread to mend it. The box was below the level of the road, and on taking it up there was proof that water from the road had been running into it. As the ball would fall during the night it was obvious that water from the road which had leaked into the box would get into the main. It appeared, therefore, that certain portions of the water used for drinking became infected by means of some of the excreta from the initial case which had first been deposited in an ashpit and then on a road near a hydrant box.—A discussion ensued, in which Mr. Stansfield, Dr. Pinkerton, and the President took part.—Mr. Vacher replied.

BIRMINGHAM GENERAL HOSPITAL.—The annual meeting of the Birmingham General Hospital was held on March 17th, the Lord Mayor of Birmingham presiding. The report showed that during last year there were 4486 in-patients and 52,203 out-patients. The financial statement mentioned that the banking account was overdrawn to the extent of £1450. The present hospital, which contains 271 beds, was opened by Dr. John Ash with forty beds in 1779, but will not be occupied much longer, as the new hospital will be opened by Princess Christian on behalf of the Queen on July 7th. Of the early physicians and surgeons Dr. Male was on the staff for thirty-six years and Mr. Robert White for forty-four years, while the three Drs. Johnstone, two brothers and a nephew, were honorary physicians for an aggregate period of eighty-five years. A special appeal for funds for the new hospital is to be made.

ANNUAL REPORT OF THE SYDNEY HOSPITAL.—The fifty-second annual meeting of the subscribers to the Sydney Hospital, New South Wales, was held on Feb. 24th. The report showed that the number of cases in hospital on Dec. 31st, 1896, was 271, the percentage mortality on admission 11 3, the average number of beds occupied 275 9, and the average cost per bed £61 2*s.* 2*d.* The total number of operations performed during the year was 1703. The out-door department during the past year had been worked on a more systematic manner, the circumstances of all applicants for out-door relief were inquired into by a special officer, and patients able to contribute the sum of 1*s.* were asked to do so. The Moorcliff Eye Hospital had been thoroughly repaired and renovated. The chairman stated that during the twenty years he had been a director of the institution it had never been in such a good financial position as it was now.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of directors of the society was held on April 14th, Mr. Christopher Heath, Vice-President, being in the chair. Three new members were elected and the deaths of five members reported. The death of a widow was announced who had received £35 per annum since 1886. Applications for grants were read from fifty-one widows, eleven orphans, and five recipients from the Copeland Fund, and a sum of £1210 was recommended to be divided among them at the next court. An extra grant of 24 guineas was made to an orphan to enable him to learn bookkeeping, &c. The expenses of the quarter amounted to £60 7*s.* The directors nominated for election at the annual general meeting the following gentlemen to fill the vacancies among the vice-presidents and directors, viz., Dr. Wilks, Dr. Pollock, and Mr. Felce to be vice-presidents; Dr. Blandford, Dr. Ogle, Dr. Brodie, Dr. de Havilland Hall, Dr. Slight, Dr. James Miller, Mr. Lovett, and Mr. Day as directors. The annual general meeting was fixed to be held on May 19th, at 5 P.M.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.—The seventh meeting of the session was held on April 14th in the Medical Library of University College, Dr. Aust Lawrence being in the chair.—Dr. Shaw showed a case of Melancholia with Catalepsy.—Mr. Morton showed a patient (and specimen) from whom the Scapula had been removed for Sarcoma.—Dr. B. Baron showed a patient with Lupus of the Nostrils and Throat; also a patient with extensive Web Formation, partially shutting off the naso-pharynx from the mouth.—Dr. P. W. Williams remarked on the cases.—Dr. P. W. Williams showed a patient with Coarse Tremor of the Vocal Cords in a case of Disseminated Sclerosis, and a specimen of Aortic Aneurysm.—Mr. Munro Smith read notes on a case of Abdominal Section in a Python.—Dr. Harrison made some remarks on the case.—Dr. W. H. Newnham read a paper on a case of Puerperal Eclampsia successfully treated by Rapid Delivery.—Dr. W. C. Swayne, Dr. Aust Lawrence, Mr. S. H. Swayne, and Dr. J. G. Swayne commented on the paper.—Mr. J. Lacy Firth read a paper on two cases of Respiratory Paralysis from Intra-cranial Pressure, ending in death.—Dr. Williams, Dr. Waldo, Dr. Fisher, Dr. Aust Lawrence, Dr. Randall, Dr. W. C. Swayne, and Mr. S. H. Swayne remarked on the paper.—Dr. Michell Clarke read a paper on a case of Acute Miliary Tuberculosis treated with Anti-streptococcic Serum on account of the presence in the blood during life of streptococcus pyogenes albus.—Dr. Fisher, Dr. Shingleton Smith, Dr. P. W. Williams, Mr. Morton, and Dr. Rogers made remarks on the paper.

THE ROYAL INSTITUTION OF GREAT BRITAIN.—Lecture arrangements for after Easter include three lectures on Tuesdays, May 25th and June 1st and 8th, by Ernest H. Starling, M.D., dealing with the Heart and its Work; and three lectures on Thursdays, May 27th and June 3rd and 10th, by Professor Dewar, the subject of which will be Liquid Air as an Agent of Research. The lecture hour will be 3 o'clock. On Friday evening, May 21st, Lord Kelvin will deliver a lecture on Contact Electricity of Metals, and on May 28th Professor H. Moissan will discuss the Isolation of Fluorine.

DIPHTHERIA IN LONDON.—In the four-week period ended on March 27th, there were notified 902 cases of diphtheria in London, all the sanitary districts being invaded. This total is slightly less than that of the February period, which was 916, and is a satisfactory decline from the totals of preceding periods. The 902 cases notified yielded a weekly average of 226. In five districts there were 335 cases notified, or more than one-third of the gross number for the whole of the county. In six other districts there were only 10 cases notified. The weekly average in February was 229; there were 299 cases in four of the districts, whilst five other areas had only 9 cases amongst them. In the March period there were 176 deaths registered in London, against 185 in the February period; whilst the per case mortality in March was 19 5 per cent. of the notifications, as against 20·2 in February. In the two weeks that followed the March period the mortality data continued to be very satisfactory. In the week ended April 3rd there were 41 deaths in London, a number which was 10 in excess of the corrected decennial average for the twelfth week of the period 1887–96. The deaths in the three preceding weeks had been 53, 37, and 43 respectively. Of the 41 deaths in the week ended the 3rd instant, there were 40 of persons aged under twenty years, 37 being of young children aged from one to five years. The admissions to hospital in the week numbered 93, against 97, 113, and 91 in the preceding three weeks. There remained under treatment at the close of the week 777 patients. In the succeeding week there was further decline in the number of registered deaths from diphtheria in London, these numbering only 23, and being 9 below the corrected decennial average for the thirteenth week of the year. All were of young persons aged under twenty years. Camberwell was credited with 5 deaths, Mile End Old Town with 3, and Poplar, Lambeth, Bermondsey, and Wandsworth sanitary areas respectively with 2 deaths. The admissions to hospital were 103, and the total number of patients remaining under treatment on Saturday, April 10th, was identical with that of the preceding week—namely, 777. In the week ended April 3rd there were 10 deaths registered from the disease in the Outer Ring, of which half were in the Hendon district, whilst in the next week the total in the Outer Ring rose to 14, of which 6 were in West Ham, and 2 in the Brentford, the Hendon, and the Edmonton districts respectively.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BENNETT, NORMAN G., B.A., B.C. Cantab., L.D.S. Eng., has been appointed Assistant Dental Surgeon to the Dental Hospital of London.

BERRY, H. P., M.B. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Grantham Town Council.

BOND, FRANCIS THOMAS, M.D. Lond., M.R.C.S., F.R.S.E., has been re-appointed Medical Officer of Health by the Chipping Sodbury Guardians and Council.

BOYD, ROBERT, M.B., C.M. Glasg., has been appointed Senior House Surgeon to Huddersfield Infirmary, vice G. W. K. Crosland, resigned.

BURGESS, R., M.B., C.M. Aberd., has been appointed Third House Surgeon to Huddersfield Infirmary, vice R. C. Jameson, resigned.

BURRELL, A. W., M.D., L.R.C.P. Lond., M.R.C.S., has been appointed a Clinical Assistant at St. John's Hospital for Diseases of the Skin, London.

BYFORD, W. F., L.R.C.P. Lond., M.R.C.S., has been appointed, *pro tem.*, Assistant Medical Officer for the Nottingham Workhouse.

CHETWOOD-AIKEN, K. C., has been appointed Senior House Surgeon to the Royal London Ophthalmic Hospital, Moorfields, E.C.

COLLIER, JAS. S., M.D. Lond., B.Sc., M.R.C.P., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, vice Purves Stewart.

COUSINS, J. W., M.D. Lond., F.R.C.S., has been re-appointed an Honorary Surgeon to the Royal Portsmouth Hospital.

CRADDOCK, SAMUEL, M.R.C.S., has been appointed Medical Officer of Health for the Thorncombe Sanitary District of the Beaminster Union.

CREE, J. DOUGLAS, M.R.C.S., M.R.C.P., has been appointed Clinical Assistant to Out-patients to the Chelsea Hospital for Women, Fulham-road, S.W.

CROUCH, E. T., M.R.C.S., has been re-appointed an Honorary Surgeon to the Gosport Hospital.

DAVIES, J. EDGAR P., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the South Wales Works, Llanelly.

DRURY, R. S., M.D. Irel., L.R.C.S., has been appointed Consulting Physician to the Children's Hospital, Birmingham.

DUFFY, J. F., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Workhouse, Ballinasloe.

FRYER, G. E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Urmston District Council.

GOSTLING, WM. A., M.D. Lond., B.Sc., M.R.C.S., has been appointed an Honorary Medical Officer to the Worthing Infirmary, vice G. B. Collet, resigned.

HALL, A., M.R.C.S., has been re-appointed Medical Officer of Health by the Mayfield Rural District Council.

HITCHINGS, ROBERT, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Headington Sanitary District of the Headington Union, vice G. C. H. Hitchings, resigned.

HOLDEN, J. S., M.D. Irel., L.R.C.S. Edin., has been appointed Medical Officer of Health by the Glemsford Urban District Council.

HUGGINS, SYDNEY P., M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Sussex County Hospital, Brighton.

JAMES, M. B., M.B., Ch. B. Vict., has been appointed Second House Surgeon to Huddersfield Infirmary, vice R. Boyd.

JOHNSTONE, THOS., M.D. Edin., M.R.C.P. Lond., has been appointed an Assistant Medical Officer by the Leeds Board of Guardians.

KEALY, J. R., M.D. St. And., M.R.C.S., has been re-appointed an Honorary Surgeon to the Gosport Hospital.

LARKING, A. E., M.D. Durh., M.R.C.S., has been re-appointed Medical Officer of Health by the Chesham Urban Rural District Council.

LOCKWOOD, JOSEPH, M.R.C.S., has been appointed Medical Officer of Health for the Kirkburton Urban Sanitary District.

LUCAS, R. C., M.B. Lond., B.Sc., F.R.C.S., L.R.C.P., has been appointed Medical Officer for the Fairfield House Workhouse of the Parish of Chelsea.

MAGORIS, N., M.B., B.S., has been appointed Clinical Assistant to Out-patients at the Chelsea Hospital for Women, Fulham-road, S.W.

MCBRYDE, PETER, M.B., C.M. Glasg., has been appointed a Physician for Diseases of Women at the General Glasgow Central Dispensary, vice G. A. Turner.

MCCOMB, WM. T., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Workhouse and for the Beccles Sanitary District of the Wangford Union.

NICOLL, J. MACD., M.B., C.M. Edin., has been re-appointed Medical Officer of Health by the Jarrow Town Council.

OWEN, A. LLOYD, M.D. Dub., M.R.C.S. Eng., has been re-appointed an Honorary Surgeon to the Royal Portsmouth Hospital.

OXLEY, ALEXANDER WEMYSS, has been appointed Junior House Surgeon at the General Hospital, Nottingham.

PEARSE, F. E., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Horsley Sanitary District of the Guildford Union.

RAILTON, T. C., M.D. Lond., M.R.C.P., F.R.C.S. Eng., B.Sc. Vict., has been re-appointed Medical Officer of Health by the Withington Urban District Council.

REDMAYNE, THOS., M.B., M.A. Cantab., F.R.C.S., has been appointed Honorary Assistant Surgeon to the Hastings, St. Leonards, and East Sussex Hospital.

ROBB, SAMUEL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Registrar and Resident Medical Superintendent for the Cork-street Hospital.

ROBERTS, E. C., M.R.C.S., has been re-appointed Medical Officer of Health for the Southgate District of the Edmonton Union.

ROBERTS, J. L., B.Sc. Lond., M.D., F.R.C.S. Eng., L.R.C.P., has been appointed House Surgeon to the Windsor Infirmary, vice G. Charsley, resigned.

ROBERTS, S. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Nechells and Saltby Sanitary District.

ROBERTS, SIDNEY JOHN, L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Medical Officer and Public Vaccinator to the No. 3 District of the Aston Union, vice W. G. Creswell, resigned.

RUNDLE, H., F.R.C.S. Eng., L.R.C.P., has been re-appointed an Honorary Surgeon to the Royal Portsmouth Hospital.

STEWART, PURVES, M.A., M.B. Edin., M.R.C.S. Eng., has been appointed Senior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, vice W. J. Harris, resigned.

WALLACE, E. J., M.D., C.M. Glasg., has been re-appointed an Honorary Physician to the Royal Portsmouth Hospital.

WATSON, JAS., M.D. Edin., L.R.C.S., has been re-appointed an Honorary Physician to the Royal Portsmouth Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer and a Resident Surgical Officer. Salaries £70 and £50 respectively, with board, washing, and attendance in the institution.

BRIGHTON THROAT AND EAR HOSPITAL, 23, Queen's-road, Brighton.—Non-resident House Surgeon for six months. Salary at the rate of £52 per annum.

BURY DISPENSARY HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board, residence, and attendance.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, 41, Sloane-street, S.W.—Surgeon.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY, Chesterfield.—Resident House Surgeon for two years. Salary £100 per year, with board, apartments, and laundress.

CITY OF SHEFFIELD.—Medical Officer of Health for the said city. The salary is fixed at £500 per annum. Applications to the Town Clerk, Sheffield.

DENTAL HOSPITAL OF LONDON, Leicester-square.—Dental Surgeon and Assistant Dental Surgeon.

DEVON COUNTY ASYLUM.—Assistant Medical Officer. Unmarried. Salary £120 per annum, with board, lodging, and washing. Applications to the Clerk, 9, Bedford-circus, Exeter.

GLASGOW ROYAL INFIRMARY, GLASGOW OPHTHALMIC INSTITUTION, ST. MUNGO'S COLLEGE.—Surgeon to the Glasgow Ophthalmic Institution, Ophthalmic Surgeon to the Dispensary of the Glasgow Royal Infirmary, Consulting Ophthalmic Surgeon to the wards of that Infirmary, and Professor of Ophthalmology in St. Mungo's College. By arrangement the same person will be appointed to all these offices. Salary £100 per annum, with share of students' fees.

GUEST HOSPITAL, Dudley.—Resident Assistant House Surgeon for six months. Board, lodging, and washing provided in the hospital.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Junior Resident Medical Officer. Salary £50 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—Assistant Surgeon. Also House Physician for six months. Salary £20, with board and residence in the hospital. Also House Surgeon for six months. Salary £20, with board and residence in the hospital.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

LIVERPOOL DISPENSARIES, Moorfields, Liverpool.—Assistant Surgeon. Salary £30, to be increased to £90 per annum, after the first year's service, with apartments, board, and attendance.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £55 per annum, with board and lodging.

METROPOLITAN DISPENSARY, 9, Fore-street, E.C.—Non-resident Dispenser. Salary to commence at £100 per annum.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Fully qualified Medical Woman as Assistant Anæsthetist, for one year.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Resident Medical Officer, for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

SOUTHAMPTON DISPENSARY.—The committee are prepared to receive applications from qualified medical men desirous of acting for the institution. Also for the position of Surgeon Dentist.

STOCKTON AND THORNABY HOSPITAL, Stockton-on-Tees.—House Surgeon, non-resident. Salary £200 per annum.

Births, Marriages, and Deaths.

BIRTHS.

HAWKINS.—On Easter Sunday, April 18th, at 73, London-street, Reading, the wife of Dr. Francis Hawkins of a son.

HIRSCH.—At Charlinch, Rectory-place, Woolwich, the wife of Charles T. W. Hirsch, M.R.C.S. Eng., L.R.C.P. Lond., F.C.S., District Medical Officer, Colonial Medical Service, Fiji, of a daughter.

HULL.—On April 10th, at Beaminster, Streatham, S.W., the wife of Edward Gordon Hull, B.A., M.D. T.C.D., of a son.

JOHNSON.—On April 16th, at Burrage-road, Woolwich, the wife of George A. Johnson, L.R.C.P. Lond., M.R.C.S.E., of a son.

NICHOL.—On April 21st, at 11, Ethelbert-terrace, Margate, the wife of Frank Edward Nichol, of a son.

SMITH.—On April 18th, at Longlands, Henley-on-Thames, the wife of George Smith, M.B., of a daughter.

WEBSTER.—On April 15th, at Duppas-hill, Croydon, the wife of George L. Webster, M.R.C.S., of a daughter.

MARRIAGES.

FLEMING—HOLLAND.—On April 20th, at St. Helen's Church, Cornhill-on-Tweed, by the Rev. H. T. Bowlby, M.A., assisted by the Venerable the Archdeacon of Lindisfarne and the Rev. A. B. Coulson, M.A., Vicar of Branxton, Robert Alexander Fleming, M.D., F.R.C.P. Edin., to Eleanor Mary, only daughter of the Rev. W. L. Holland, M.A., Rector of Cornhill.

ROUW—D'ALMAINE.—On April 14th, at the Parish Church, Sutton Courtney, R. Wynne Rouw, M.R.C.S., L.R.C.P., L.D.S., of Wimpole-street, W., to Beatrice Mary, youngest daughter of H. D'Almaine, of Sutton Courtney, Berks.

WIGHTWICK—TURNBULL.—On April 19th, at St. Augustine's, Queen's-gate, Fallon Percy Wightwick, M.D., of Upper Brook-street, W., to Katharine Kerr, widow of G. B. Turnbull, Esq., of Rosary-gardens, S.W.

DEATHS.

HARDING.—On April 21st, at Whittlesea, Cambs., Charles Fincham Harding, M.D., aged 56 years.

HARPER.—On April 13th, at Stowmarket, John William Harper, M.R.C.S. Eng., L.S.A., aged 70 years.

IRVINE.—On April 18th, at Pitlochry, Robert W. Irvine, M.B., F.R.C.S. Edin., aged 43.

JAMIESON.—At Rome, on April 17th, Ethel Mary (*née* Hensman) wife of Dr. Adam Jamieson.

KING.—On April 13th, at Eltham, William Talbot King, M.D., formerly of Victoria-park-road, South Hackney.

MAGRATH.—On April 10th, suddenly, at Forest Row, Sussex, John Magrath, M.D., in his 53rd year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.)

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (26th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. H Marsh: On Senile Tuberculosis and Subcutaneous (Tuberculous) Ulceration.—Mr. W. Armstrong (Buxton): On the Value of an Exclusively Red Meat Diet in certain cases of Chronic Gout.

TUESDAY (27th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Dr. J. W. CARR: Non-tuberculous Posterior Basic Meningitis in Infants (adjourned discussion)—Dr. F. Warner: On the Relations between Bodily Development, Nutrition, and Brain Conditions in their Pathological Aspects.

WEDNESDAY (28th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (Limmer's Hotel, Conduit-street, W.).—8.45 P.M. Sir Douglas Powell will deliver an Address. 9.30 P.M. Reception by the President (Dr. A. S. Myrtle) and Conversazione. Exhibition of Drugs and Instruments, &c.

NORTH-WEST LONDON CLINICAL SOCIETY (North-West London Hospital).—8.30 P.M. Clinical Cases.

HUNTERIAN SOCIETY.—Discussion on Headaches, introduced by Dr. Hingston Fox. Dr. A. Haig and Dr. H. Campbell will join in the discussion.

FRIDAY (30th).—BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—3 P.M. Cases:—Dr. Macnaughton-Jones: Esthiomenic Menstrual Ulcer of Nose.—Dr. F. Tresilian: (1) Stenosis of External Auditory Meatus; (2) Web Formation in External Auditory Meatus; (3) Congenital Syphilitic Disease of the Nose; (4) Lupus of Vestibule and Inferior Turbinate.—Dr. G. C. Wilkin: Syphilis of Larynx and Lung.—Dr. Milligan: Empyema of Frontal Sinus Cured by Operation. Microscopical Specimens:—Dr. Milligan: (1) Sarcoma of Nasal Septum; (2) Tuberculous Growth (septum nasi); (3) Rodent Ulcer (external ear). A Discussion will be opened by Dr. G. Macdonald and Dr. D. Grant on The Indications for, and the Methods of, Removal of Naso-pharyngeal Adenoid Vegetations.

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-st., Cavendish-square, W.).—8 P.M. Dr. L. Parkes: Some Observations on the Infectivity of Diphtheria, and its Relation to School Closure.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Prof. H. Robinson: Sewerage and Sewage Disposal.

TUESDAY (27th).—ROYAL INSTITUTION.—3 P.M. Dr. T. Anderson: Volcanoes. (Tyndall Lectures.)

WEDNESDAY (28th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—3 P.M. Mr. W. B. Bryan (conducted by): Inspection and Demonstration at the East London Water Works, Lea Bridge.

THURSDAY (29th).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Mr. C. Mason: Scavenging, Disposal of House Refuse.

FRIDAY (30th).—ROYAL INSTITUTION.—9 P.M. Prof. J. J. Thomson: Cathode Rays.

SATURDAY (1st).—THE SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—Mr. J. E. Worth (conducted by): Inspection and Demonstration at the Sewage Outfall Works, Barking.

ROYAL INSTITUTION.—5 P.M. Annual Meeting.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

THE CREMATION SOCIETY OF ENGLAND.

DURING the year 1896 there were 137 cremations carried out at Woking, as compared with 150 in 1895, and 125 in 1894. There are at the present time three crematoria open in England and Scotland in addition to the one at Woking which belongs to the Cremation Society of England. These three are respectively at Manchester, where fifty-five cremations took place during 1896; at Glasgow, where there were eleven cremations; and at Liverpool, where two cremations have been performed. The crematorium at Liverpool was only opened in the middle of September, 1896, the inaugural ceremony being performed by the Earl of Derby, who was Lord Mayor of Liverpool at the time. It immediately adjoins, and communicates with, the Anfield Cemetery; the site and crematorium have cost some £7000 and are the property of the Liverpool Crematorium Company, Limited. The published accounts of the Cremation Society of England show for 1896 an income of £820 and an outlay of £740. The full charge for cremation at Woking is £5, the extras being the local clergyman's fee of 1 guinea if it is desired that he should officiate at the service, and a payment of about 10s. for the attendance of bearers if undertakers' assistants are not brought from London. Unless it is intended to hold a funeral service in public the body should not be placed in a heavy or costly coffin, a light pine shell is the best receptacle for the purpose of cremation. The annual report of the society makes sympathetic reference to the late Sir Spencer Wells, who was one of its founders and whose remains were cremated at Woking. The offices of the society are in New Cavendish-street, Portland-place.

C. B. cannot be advised to break an agreement into which he has entered. His solicitor can tell him how far the contract is binding, or, as he phrases it, "legal." If he is advised that he has contracted himself out of certain facilities he must acquiesce in the consequences of his own act unless he can prove that he was induced to sign by misrepresentation. The fact that he did not understand what he was doing when he signed is of no legal import.

Dr. J. Ross.—Under the circumstances detailed by our correspondent we do not see wherein the necessity for the inquest existed, but the coroner's reason might, nevertheless, be very sound.

THE CRIME OF ABORTION IN THE UNITED STATES.

DR. H. P. BEIRNE, Professor of Natural Science, Corpus Christi Lyceum, Galesburg, Illinois, writes a letter to the *New York Medical Record* of April 10th, 1897, lamenting that American families which used to number eight or ten now consist of three or only two, and attributing it, not to any natural difference, but to moral differences in the estimate of such questions. He instances one woman in a city with a dozen churches and 20,000 inhabitants who boasted that she had had 100 cases of successful abortions.

"DR. RENTOUL'S EXPENSES FUND."—FIFTH LIST.

To the Editors of THE LANCET.

SIRS,—It is intended to close this fund next week, when a statement will be made as to the exact amount subscribed. I may say now that after deducting expenses we are about £9 short of the sum asked for at first. As several practitioners who have tacitly promised to subscribe have as yet not forwarded their donations, I beg that they will send them on without delay and allow me to say next week that the sum desired has been subscribed.

I am, Sirs, yours faithfully,

ALFRED COX, M.B. Durh., Hon. Sec. and Treasurer.

Gateshead, April 20th, 1897.

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Dr. W. T. Greene.—We thoroughly agree with our correspondent that there ought to be some way of checking the open incitements to immorality and even to the crime of abortion that are furnished by certain advertisements. We have often referred to this matter in the columns of THE LANCET, but the remedy is in the hands of the public. If the public would complain in sufficient numbers to the managers of the papers inserting these filthy advertisements, that either they must lose such advertisers or their readers, the advertisements would cease.

IMPROPER ADVERTISEMENT.

WE have received a copy of the *Louth Advertiser* wherein an advertisement of an optician is supported by signed testimonials from an "M.A., M.D., M.R.C.S.," and a "Surgeon-Major, Army Medical Reserve, &c." We cannot suppose that these gentlemen knew the commercial use to which their testimonials would be put, and advise them to take means to prevent the optician giving them this unfortunate publicity.

AN INTERESTING SOUVENIR.

MESSRS. MARCUS WARD AND CO., Limited, are about to publish a plate depicting the Queen at the Coronation in 1837 and as she appears at the present day. We are asked to announce that the profit realised by the sale of the publication will be handed over to the Queen's Jubilee Institute for Nurses.

DISINFECTION AFTER ANTHRAX.

To the Editors of THE LANCET.

SIRS,—Perhaps some of your readers could give me some information as to the best way of thoroughly disinfecting a cow stable after anthrax. About three weeks ago a farmer near here lost a young cow, which luckily was kept by itself, from the above disease, and the stable it was in was very thoroughly lime-washed and some perchloride of mercury (1 in 1000) used to wash down the floor, but the other day I made a plate cultivation from the soil and dust between the bricks which form the floor of the cow-stable and in a day or two found colonies of anthrax bacilli. I am anxious, therefore, to know the best way to disinfect a stable so as to avoid all risk for the future. I may say that there had been no previous case on the farm within the memory of the present tenant or his father, also that every precaution was taken to avoid spilling any blood when the beast died.

I am, Sirs, yours faithfully,

April 13th, 1897. M. O. H.

*** It will be found a difficult matter to disinfect *in situ* the soil between the bricks, and it would probably be the safest course, having regard to the tendency of the anthrax bacillus to multiply and to form spores in polluted earth, if the floor of the stable were taken up and relaid with new bricks set in cement; and this course would be especially indicated if the floor be at all dilapidated. Care should, of course, be exercised by the workmen in removing the bricks and soil, both of which should be subsequently disinfected and safely disposed of. If entire reconstruction is impracticable the earth from between the bricks might be as far as possible removed, and the intervals, after being saturated with a strong solution of perchloride of mercury or crude carbolic acid, be subsequently filled in with good cement, the surface of the bricks being well covered with the same material. Planing the manger to some depth would appear to be a useful precaution.—ED. L.

AN UNUSUAL CASE.

To the Editors of THE LANCET.

SIRS,—I have been in active general practice for more than thirty years, and of course have met with many cases of intestinal obstruction; in some of these cases the obstruction has been caused by very peculiar articles, but the following case is unique as far as my experience is concerned. Last week I was called to a middle-aged woman, who was suffering from all the symptoms of complete obstruction, and after making the usual examination for hernia, &c., the turn came to the rectum. This I found completely blocked with an immense mass of solid matter on which it was difficult to make any impression with the finger; however, after about half an hour's work I succeeded in excavating a portion of the mass, which on examination proved to consist of wool firmly welded together with fæcal matter. After further work I managed to get the tube of an enema syringe partly through the mass, and injected about three pints of warm water. This made matters worse, for it washed away the fæcal matter, leaving behind a firm mass of nothing but wool, which appeared to fill the whole pelvis. To make a long story short, after three "sittings" at intervals of twenty-four hours I succeeded in removing the whole of the wool and obtaining an action of the bowels with relief of all the symptoms, the quantity of firmly matted wool being larger than my doubled fist, both patient and medical man being considerably "pumped" after each operation. The cause of the whole trouble was that the patient had been partaking largely of lambs' tails ever since the advent of the lambing season. The lambs' tails, instead of being skinned as, I believe, is usual before they are cooked, had only been singed and then baked, thus leaving, probably, much of the wool adherent to the flesh. I could not arrive at any conclusion as to the number of tails eaten, but I suppose they must have been very numerous. The patient declares that she will never eat another tail as long as she lives; but I think very likely about this time next year she will forget her troubles and again indulge in this luxury. If she does so without removing the wool, all I can say is, "May I not be there to see." It would be interesting to me to know if this cause of obstruction has been met with before.

I am, Sirs, yours faithfully,

Kettering, April 18th, 1897. J. WINTER DRYLAND.

B.—It seems to us a pity that our correspondent did not write to A. on the matter, as it is a pity that A. has seen in the omission to do so evidence of serious misconduct. The whole affair is so trivial that surely the parties concerned are not going to allow it to cause a breach in their professional relations with each other.

Juvenis.—We do not know where the literature on the subject can be procured, but there is a society existent for the propagation of the tenets.

R. D. (Westbourne) has omitted to enclose his name and address.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 22nd, 1897.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
April 16	30·27	S.W.	52	48	88	55	45	0·20	Cloudy
,, 17	29·94	S.W.	52	51	88	57	47	0·12	Raining
,, 18	30·01	N.W.	52	45	100	60	45	...	Fine
,, 19	29·90	W.	49	45	104	58	43	0·21	Fine
,, 20	29·57	N.	48	44	91	57	44	0·02	Cloudy
,, 21	29·78	S.	48	46	62	57	46	0·10	Overcast
,, 22	30·07	E.	46	46	88	51	44	...	Cloudy

During the week marked copies of the following newspapers have been received:—*Brisbane Courier, Scotsman, Huddersfield Chronicle, Glasgow Herald, Lancashire Post, South Wales Daily News, Croydon Guardian, Bradford Observer, Durham Chronicle, North British Daily Mail, Worcester Herald, Bedfordshire Standard, Colchester Gazette, Bolton Evening News, Times of India, Sheffield Independent, Birmingham Daily Gazette, Pioneer Mail, Newcastle Leader, Sheffield Telegraph, Derby Mercury, East Anglian Times, Architect, Kidderminster Shuttle, Liverpool Daily Post, Somerset County Herald, Hampshire Post, Andover Advertiser, Le Temps, Builder, Rochester Journal, Leeds Mercury, Western Press, Windsor Chronicle, Brighton Argus, Sligo Independent, Kingston News, Midland Free Press, Cumberland Advertiser, Yorkshire Post, Alnwick Gazette, Cambria Daily Leader, Hastings News, Sussex Daily News, Leicester Post, Worcester Chronicle, Bristol Mercury, Shields Daily News, Mining Journal, West Middlesex Herald, Sanitary Record, Brighton Gazette, Herald Standard (Melbourne), St. Bartholomew's Hospital Journal, Reading Mercury, Weekly Free Press and Aberdeen Herald, Local Government Journal, Surrey Advertiser, Willesden Chronicle, Hertfordshire Mercury, Local Government Chronicle, City Press, Guernsey Star, The World, Paisley and Renfrewshire Gazette, Liverpool Courier, The Citizen (West of England), West Middlesex Herald, Gloucestershire Chronicle, Stowmarket Courier, &c., &c.*

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The Lumleian Lectures

ON

SOME PROBLEMS IN CONNEXION WITH APHASIA AND OTHER SPEECH DEFECTS.

Delivered before the Royal College of Physicians of London on April 1st, 6th, and 8th, 1897,

BY H. CHARLTON BASTIAN, M.A., M.D. LOND., F.R.S.,

CENSOR OF THE COLLEGE; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND TO THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

LECTURE III.[1] (*concluded from p. 1137*).

Delivered on April 8th, 1897.

(5) DEFECTS RESULTING FROM ABNORMAL CONDITIONS OF THE LEFT VISUAL WORD-CENTRE.

THERE is not the same variety in the defects of speech caused by disease of the visual word-centre that is to be met with as a result of disabilities in the auditory word-centre. This is apparently due to the fact that in the great majority of persons voluntary revival of words occurs primarily in the auditory word-centre, while the visual word-centre is called into activity mainly by stronger stimuli—either by those coming to it through associational fibres or by still stronger incitations that come directly from without. It is only in comparatively rare cases, as we have seen, that the visual word-centre takes the place occupied in the great majority of individuals by the auditory word-centre, as the seat in which words are primarily revived in silent or in spoken thought. Consequently the speech defect known as "amnesia verbalis" occurs almost only as a result of a lowered functional activity in the auditory word-centre, and only in extremely rare cases (where the individual is a very strong "visual") as a result of mere lowered activity in the visual word-centre. Since a volitional stimulus is weaker than that which comes through an associational channel from a centre strongly aroused, and weaker still than that which comes to the centre directly from without, and since a lowered nutrition or diminished molecular mobility of a centre from any cause might lead only to a failure in the centre to respond to the weakest stimuli, it is to be expected that such results in relation to language would show themselves only in connexion with the centre accustomed to respond to such stimuli (namely, the auditory word-centre), and would be almost absent in connexion with the visual word-centre.

Consequently we know next to nothing about the effects of mere functional degradation in the visual word-centre—that is, of slight disabilities such as when occurring in the auditory word-centre are productive of the various degrees of amnesia verbalis already described. All that can be said is that when such functional degradation of the visual word-centre is present it would (*a*) in the rare case of the patient being an extremely strong "visual" of itself tend to produce amnesia verbalis, as was seen in a patient under the care of Charcot, whose case is referred to by Ballet[2]; or (*b*) even in an "auditive" tend greatly to aggravate any disability that may have been caused by a co-existing defect in the auditory word-centre, and also to hinder recovery therefrom; further (*c*) that where the functional defect involves both word-centres the amnesia ought to be more than usually bad and probably associated with more or less of paraphasia.

Effects produced by the destruction of the left visual word-centre.—We have to pass, then, at once to a consideration of the effects produced by destruction of the left visual word-centre, which is now generally supposed to be situated in the angular, and possibly in part of the supra-marginal, convolution. These effects will be found to vary in different individuals, just as variation was found to be the case when we had to do with the results of lesions in the left auditory word-centre.

One important difference between the effects of lesions of the visual word-centre as compared with those following upon lesions of the auditory is that speech is very little, if at all, interfered with. There is no well-marked aphasia or paraphasia, only a very slight amount of paraphasia in some of the cases.[3] That there should at times be such slight disturbance of speech is not to be wondered at if we bear in mind the close functional relationships of the visual and the auditory word-centres, and how easily therefore the functions of the latter may be disturbed by a lesion in the former.

It is often found that word-blindness is associated with right-sided homonymous hemianopsia—that is, on the same side as paresis of the limbs—for there is often no complete hemiplegia in these cases. The hemianopsia is generally due to destruction of the optic radiations of Gratiolet; but where the lesion is quite limited to the cortex these fibres will not be involved, so that hemianopsia is not a necessary accompaniment of word-blindness.

Agraphia also is a symptom sometimes present and sometimes absent in cases of word-blindness. The presence or absence of this symptom is, however, of much more fundamental importance than the presence or absence of hemianopsia. It is best, in fact, to divide cases of word-blindness into two categories—namely, (*a*) cases in which the word-blindness is associated with agraphia, and (*b*) cases in which there is no agraphia. In the latter group it is found that the individuals can write as well with the eyes closed as when they are open, and further that they are, after a brief interval, unable to read what they themselves have written.

(*a*) In the cases where agraphia is present it is commonly found that such patients are capable of writing their names correctly, although they can write nothing else. The signature is an emblem which may, by reason of its familiarity, be executed by the cheiro-kinæsthetic centre with the smallest amount of prompting; and it would appear that this prompting may come from the common visual centre in cases where the left visual word-centre is destroyed. Similarly a word-blind patient may be able to recognise his own name when he sees it, though apart from this there may be complete alexia. As Déjerine says[4]: "He recognises it by its general form, by its physiognomy, and not by the assemblage of letters of which it is composed"—just, in fact, as he would recognise a geometrical figure or any other drawing. Differences of degree are, however, met with in word-blindness. In some cases, though the patients are unable to recognise single words (word-blindness), they can recognise individual letters; whilst in others not even letters can be recognised (letter-blindness). These two forms were distinguished by Kussmaul, though he sought to make a more radical distinction between them—believing that they represented differences in kind rather than of degree. All intermediate forms, however, may be met with. Sometimes patients will recognise certain letters and not others; and in one case recorded by Batterham vowels only were recognised.

In illustration of this first group of cases, where word-blindness is associated with agraphia, I will quote one of a very typical character that has been reported by Déjerine.[5]

CASE 32.—A man, aged sixty-three years, seven years previously had a slight attack of right hemiplegia, not accompanied by speech troubles, which at the time of his entering the Bicêtre (Feb. 12th, 1890) had almost completely disappeared. Soon after his admission he found one morning that he could no longer read his newspaper. On examination it was ascertained that there was no trace of word-deafness: he easily understood all questions. He was unable to understand either print or handwriting, and could not even name a single letter of the alphabet. On the other hand, he could recognise his name and could name all objects shown to him. Right lateral hemianopsia was believed to exist. There was paraphasia both in his spontaneous speech and in his repetition of words, so that it was sometimes difficult to understand what he said. When asked to write he held the pen most awkwardly and could write nothing but his name, and that so badly as to be scarcely recognisable; and whether he attempted to write spontaneously, from dictation, or to copy he wrote only his own name, "Séjalon," in an indistinct fashion. On March 10th the initial paraphasia had almost completely disappeared, so that he could readily give particulars concerning his former life and his present condition. His writing was as bad as before, but he held the pen much better. He could not write a single word spontaneously or from dictation, nor could he copy—he made mere meaningless strokes only; but he could write from dictation a numeral or a number composed of not more than two figures. There was complete alexia, as before; he recognised his own name, but nothing else. On Nov. 5th, 1890, the

[1] Lectures I., II., and part of III. were published in THE LANCET of April 3rd, 10th, and 24th, 1897, respectively.

[2] Loc. cit., p. 101.

[3] For instance, in Nos. 44, 45, 47, 49, 50, and 52 in Mirallié's list of cases included under the heading "Cécité Verbale" (pp. 152-157).

[4] Comptes Rendus de la Société de Biologie, 1891, p. 200.

[5] Loc. cit., p. 197.

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